

An Interview with
DAVID BOYD

Conducted by Marta Monti
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Interviewer: Hello, this is Marta Monti. Today is July 15, 2015, and I am speaking on the phone with David Boyd from the Midcontinent Independent System Operator (MISO). What I'd like to start with is just going back to your time at the PUC (Public Utilities Commission) and talking about the project from there and then getting a taste of what you're doing at MISO now and how that fits in. I'm sure they'll all become intertwined at some point. That's what we've got in store.

Interviewee: All right.

Interviewer: How about we start back with when you first joined the PUC in 2007. The CapX project had already been underway, and they were starting to apply for their Certificate of Needs. I'm wondering at what point you entered and started to encounter the project?

Interviewee: You're gonna test my memory a little bit. I know that the filings had been made for both the need and the route permits. I'm not sure whether I was there or not for the very first action which was to combine all the projects into one need. I honestly don't remember if I was there for that or not. I also was a homeowner within the corridors under consideration. I was in this interesting, unique position to watch the communications plan unfold from a consumer side or a homeowner side as well as watching this from the Commission side.

To me what was interesting about this—Minnesota does have a—and I think other states would be smart to try this. We have a state law that requires the transmission owners to do a biennial transmission plan. I think it's on odd numbered years they file a report with the Commission that identifies where they see congestion and transmission issues and propose, I guess, more—well, propose potential solutions. I think they can even use that filing—if they choose to do so—as a petition for a need permit. They don't choose to do that. The point is, I think, that that gives the state broadly and the regulators a two-year window into where people like the Xcel Energy partners see the pinch points and what they might have in mind to fix it. It also means that the transmission owners in some loose way already are organized into a working, workable body. I think that loose familiarity and the fact that that document exists probably helped feed the whole CapX partnership—very, very unique partnership, but a really powerful coalition that they built trying to look very broadly at the state's transmission need.

The earliest days are a little foggy, but certainly I was there as the permits were starting to be scheduled and the records were being developed and shipping things off to the administrative law judges for review. I think I was chairing the Commission when the need and the routing dockets went through a little bit later down the road.

Interviewer: According to my record, yeah. The combination of the three lines—that Certificate of Need was filed in 2007. Yeah, it probably is later on when you entered. What I'm wondering—I'm curious about that. Is that practice of combining lines like that something that has been done before? Is it a common practice to apply like that for—with lines like that in a group?

Interviewee: I'm not sure whether it's been done before. I don't think it was a contentious decision to treat them as one. Essentially—again, I'm a little foggy on the memory—but the applicants argued that the degree to which this covers the whole state and the extent to which you're going to be talking about the statutory list of need requirements would mean that they would almost be filing the same kind of record. There actually were four lines—there's a little short 220 line up in the Grand Rapids area—that they'd end up iteratively filing four very, very similar documents. For administrative efficiency it was probably—it was reasonable, they would argue, to take the need issue up as one.

If it was contentious, it would probably be contentious from those who might oppose the projects. I could imagine that someone who didn't like the concept would prefer to have four opportunities to argue against need rather than one large opportunity.

Doing routing in any larger bite would be unworkable, just the long lines as it was. Three of 'em were pretty long lines. Getting the permits and the right kind of local meetings generating alternatives, and the things that are in the statutes would have been impossible.

The need—I don't think that was a very tough decision at all. Would it happen again? Maybe only if there were some sort of CapX-like piece put together. At the same time, if you had two smaller lines to be permitted that were both within one county and served the same broad electrical purpose, I suppose you've established a precedent—at least the Commission will consider this sort of thing in the future. But I think the argument is administrative efficiency and the fact that the records were likely to be quite similar. The mix of three of these lines—yeah, three of the four were reliability projects, and one kind of became the

poster child for MISO's—what became the MVP (Multi-Value Project) tariff bucket.

If there was a unique one to pull out it probably would have been Brookings because it didn't necessarily fit the cleanest, purest electrical definition of reliability and need. Nevertheless, it was at least kind of a muddied project from need. Need was certainly part of the argument. Public policy was another part of the argument for that one.

Interviewer: Sure, sure, and how it got the MVP designation, yeah.

Interviewee: And the last piece—again, you'd have to go read the statute, and I can't quote it to you—I don't know whether the statute has language—permissive language—that would—not encourage—but allow this sort of a group need application or not. I don't recall the statutes having explicit wording that would prohibit one from putting in a multi-line need application, but I can't say that I remember—nor can I say that I remember language that provides for an option at the Commission's discretion or anything like that. It may just be—and you'll get this perhaps as you talk to the little call types of the world—they simply saw an opportunity as a chance to save everyone time and process that what have you got to lose to ask.

Interviewer: Yeah, yeah. You're right. That's pretty much the exact story that I'd gotten from them that they would essentially be submitting the same papers for each line. Yeah, that answers the question that I was going to ask you if this was unique to Minnesota that—

Interviewee: I think it is. I don't know of anywhere else that the utilities themselves have been able to put their differences—their business perspectives—these are really different businesses when you've got call opportunities and IOU's (Investor Owned Utilities). Their ability to come together, put that aside, be willing to share data to the extent needed, work together sufficiently to get their permits, and then organize themselves in a business manner to build the lines is really a very unique model. I don't know of it happening anywhere else. I don't think you can argue with the outcome. It was extraordinarily well planned. As slow as transmission is, I would say from them filing permits in 2007 to us being done with routing in what—it may have been '12 or '13 for the last one.

Interviewer: Yeah, around then.

Interviewee: It sounds like a long time, but by transmission standards that's not so bad.

Interviewer: Yeah, I'm learning it's pretty quick.

Interviewee: It's sad to say that, but bureaucracy was the least possible impediment. That may not be good enough, but I think everybody involved who will benefit from these projects ought to take some—I don't know—some comfort in the fact that this moved in an orderly pace and it was not unduly bogged down by state permitting processes.

Interviewer: Yeah. It's interesting that that's the way it worked out since Minnesota has a pretty strict regulatory environment or process to go through at least compared to some other states in the country.

Interviewee: True enough, true enough. I think that's credit to all the parties, whether you're supporters or opponents—they got in, they dug in, they did their work. There was a good record built basically on a timeline that didn't move a whole lot. I think you've gotta credit all the parties who joined in that effort and congratulate them for that.

Interviewer: Let's shift over to talk a little bit about the permitting process. What corridor were you in? What line were you—

Interviewer: Brooking.

Interviewer: Okay, so you were in the Brooking—

Interviewee: I'm in the South Metro—they started with their 10-mile wide corridor—and actually now live within a mile of Brookings still. I always stayed fairly close—geographically close to that line.

Interviewer: Yeah, you're bonded to it now. What was that process like with—for each line there were five utilities that were on the project, is how it got split up. How did that make it different going through the permitting process dealing with five?

Interviewee: From our side it wasn't because the applicant was the CapX partnership, so it was as if you were still dealing with one applicant. I think it was different, and where I think they hit some resistance from some of the parties was that that consortium was a little amorphous. It wasn't clear enough to some of the parties what the ownership structure was, who owned which line. That, I think, frustrated some of the most ardent opponents of the projects.

But from a state side, it was as if we were dealing with one applicant who happened to have four or five—or eleven if you wanna think of it that way—partners. It really wasn't any different than—in fact most of the faces before us are the same kinds of

attorneys and engineers that we would see for single utility projects. They just happen to be working on this partnered project instead of a single line. Again, it's a matter of them organizing themselves and how they chose to present themselves and how they chose to incorporate comments from multiple parties into one series of coherent papers that went forward towards the hearing process and then to the state Commission.

Interviewer: Yeah. You are the first—well, former Commissioner—from Minnesota. But I've spoken with commissioners from North Dakota and South Dakota. When I asked them about how it was dealing with a multi-state project—a few of these lines cross—when I posed the question to them they said that it was really up to the utilities to do the go-between and the figuring out and the coordinating between all that.

Interviewee: Yeah.

Interviewer: I'm assuming it's true, and that makes sense. But what sorts of interaction did you have with the other states' PUC's (Public Utilities Commission) or PSC's (Public Service Commission)?

Interviewee: Well, very, very little. The single issue that you worry about with a multi-state project is the point of crossing the border. We really aren't in a position to call them up and say, "Hey, what are you thinking? We like this spot," or, "Of the three alternatives, we prefer that one." I don't think that kind of contact is exactly envisioned. I don't know that it's illegal. I don't know that it's unethical. But we didn't wanna do anything to jeopardize any projects. The trickiest one really was the La Crosse line that had to cross the Mississippi River. Not only do you have two states, but you have various Federal entities involved, too. In that case you could talk—and I think our staff did talk—with the Army Corp of Engineers, as an example. The Army Corp I wouldn't say was a go-between, but the Army Corp would surely have been talking with both states. The Army Corp, in that case, also had to—well, I'll say the Federal government. I don't remember if it was Interior or the Army Corp of Engineers—had to issue a permit themselves. After the Army Corp looked at that particular docket, they concluded that there was—I think this is fair—a clear best crossing point on the river. If they won't permit the crossing of the river then it's hard for us to imagine permitting a line that goes anywhere else.

Interviewer: Sure, right.

Interviewee:

That became, I think, the trickiest of the three. That's about the point where the Secretary of Energy had taken a former Commissioner—from Wisconsin, as it turns out—and tasked her with trying to form what they called a rapid response team on transmission projects. The goal of that Federal deal was to ask DOE (Department of Energy) to become the convening parties so that multiple entities who have a say in permitting, say, in the Western lands where BLM (Bureau of Land Management) owns a lot of land and then Interior owns different parts. Conceivably they all have to do their environmental studies, and they all have to give permits. It was to try and coordinate those Federal groups to minimize the intrusion and the delay from the Federal government. The La Crosse line that had to cross the Mississippi was an example of a place where they tried—I don't know how effective they really were—but they tried to see that the various Federal entities were on the same page.

I think what Minnesota has done in instances where they work with the Feds—say it's the Department of State for an international border crossing or a state crossing that involves a navigable river—they tried to find the most stringent environmental review among the parties involved and get some agreement that everyone can use a single environmental review, but it's the one that is the most stringent of the two or three or four, however many bodies are involved. There's a coordinating role there that I think can be very helpful.

We didn't call North Dakota and say, "Hey, Commissioner X, what are you thinking?" What's funny about those lines is there is an odd pressure that I think—let's say a line that went—Brookings had, I don't know, 12 miles in South Dakota and then 230 or whatever in Minnesota. We've permitted the line and we've permitted up to a crossing point. I will say it does put the other state in an awkward position. They could choose to permit to a different crossing point, and we'd have to think about modifying ours, or they could choose to not issue the permit at all and then one of the ends of the line is not allowed. It does put the last state or the second state or the other state into a bit of an awkward spot. If the record has been built—as you've heard from other states—if the burden has been met to show the need and then the rest is some amount of negotiation on where to cross borders, it all works out. But if the record isn't well done, now you're in the position of the state with a little snippet of line feeling like they're holding up some large project, and they're being obstructionists for some reason.

Of course, it's all about the quality of the record. What you heard, I think, is the right language that (a) the burden's always on the applicant, (b) the applicant themselves can file to a crossing point. They're obligated to have different—in Minnesota, at least—route options on file. We had a bit of a dust-up about whether route options had to include different crossing points. That was a matter of legal interpretation. If I start at point A and I end at point B but I show various pathways to get from A to B, does that meet the letter of the law or do I have to have a line that crosses at three different places on the South Dakota border to meet that provision? Lawyers always—they have fun with those sort of things.

Interviewer: Of course. It's their bread and butter.

Interviewee: What seems to be clearest is that the applicant can make the case that, "I wanna cross at point X." It does then rely on—we have to rely on them to provide the record about why crossing at point X is optimal. This is a long discussed—multi-state transmission projects are hard, and this is exactly one of the reasons they're hard.

Interviewer: Yeah.

Interviewee: How do you convene—some states have the ability on need specifically to enter into multi-state hearings. Some states are allowed—and I think Minnesota is one—that conceivably Minnesota and Wisconsin could have had a joint meeting of their two commissions and have the need permit—for the need part of a permit—run once by a joint pool of commissioners. It's never been used. States prefer to wanna build their own record, to do their own business by the state. But if you wanna keep talking about what might expedite construction of transmission—as part of another project that we worked on looking at the five states in the upper Midwest, we asked whether CapX would be useful. But when you come back to the siting part of it, the actual routes are gonna still have to be determined one state at a time. I don't think there's a way around that unless new laws are enacted. It's a lot different than doing a line that runs from the Twin Cities to Brainerd. Everything's within our control. All of the environmental review, it's all laid out in our law. When you cross the state line, especially a river like that with navigable—with Federal regs in the way—it gets a little cloudy.

Interviewer: Mm-hmm. It's interesting. Now with your role and working with MISO, clearly the focus is more regional than state-by-state as that's what you're charged to do through FERC (Federal Energy Regulatory Commission) orders and all that stuff. As you're

putting your hat on now as a MISO rep of the regulatory affairs, what could be done from a MISO perspective to help strengthen more coordination? I definitely agree with you. There are some parts of the process that have to remain local and should remain local. Someone in Minnesota—in a county in Minnesota—knows better where that line should be in that county than someone from Wisconsin most likely.

Interviewee:

I think that's definitely true. As you take decision making further and further away from the people who are most directly impacted, the acceptance goes down. When people talk about Federal backsight—the 2005 Act that FERC thought would give them authority to permit lines that were flat out rejected by states, which the courts didn't agree with that ruling much to FERC's chagrin. I imagine myself dealing with some of the landowners or even just some of the lawyers who represent landowners, having to go to Washington to make the case about what's special about this particular piece of land in rural Minnesota.

When you move the decisions farther and farther away from the impacted people, it's not just the quality of the decision that suffers. It might, right? But the fact the people aren't heard, it becomes more of an issue. We've had proceedings where we've had people come in and say, "I'm an impacted landowner, and I don't like that this pipeline or power line is gonna be on my land. But the state was part of a reasonable process that I understood. I know I was heard. I didn't prevail. But I respect the process." That doesn't happen every day, but when it does you realize that the way you do things is important. The people you have out in the field who are conducting hearings and gathering information and communicating is really important. If you run that whole thing out to Washington D.C., I wonder if it would work as well.

To answer your question about MISO, I think the main thing we do is we're obligated to do regional planning. Order 1000 certainly reinforced that which probably every RTO is doing anyway, to be looking regionally at needs and congestions, and things that impact reliability, and then maybe in a separate screen things that can be done to remove congestion and lower prices. The states are all part of that. They have roles. They have opportunities. They have voices. That process is a convening function. It's at least partly individual projects coming into the planning process based on need from a local perspective. It has a sense of us trying to look across the whole footprint and suggesting ideas that come from our perspective, and then bringing those bottom-up and top-down perspectives together in the planning process.

We're probably lucky. We think we have a good working relationship with the state regulators. That's not to say they all love their RTO, its footprint or any other. But when you do convene people and you bring them together, and you offer opportunities for debate and discussion, and you keep things focused and civil—when there are needs that come forward and someone's gonna be impacted for any infrastructure you need to build, I think you start to get that sense that, "I may not like it, but I understand why it's there. I can respect the need for a project to go forward."

Our convening role—we don't have a choice but to do these plans across 15 states—not every project impacts every state obviously. But we work a lot with OMS—with the Organization of MISO States. We try to be clear with them and transparent with them. They don't always agree with what we've done or how we've done it either. It's a relationship that's always under development and trying to seek improvement in that way. The less we appear to be unilaterally forcing decisions of any sort onto anybody who is a stakeholder at MISO, the better off we are.

Ultimately decisions have to be made, and some decisions are MISO's to make and some are for the stakeholders to make and some are a curious blend. Communication is awfully important.

Interviewer: I know this was before your time at MISO, but I was wondering if you could speak to the MVP process at all from—

Interviewee: Sure.

Interviewer: I don't know what perspective. It's up to you what angle you'd like to—if you could, if you have anything to say about that.

Interviewee: Let me go back a layer. When I was chairing the Commission, the governors from seven states sent a letter to John Bear and said essentially, "Mr. Bear, we have state policy mandates, our renewal portfolio standards. We're worried that we won't meet those objectives because the transmission system isn't developing nearly fast enough to allow—primarily when—to move from generation to load," and kind of, "What are you gonna do about it?" In response to that letter, there was an agreement that governors from five of our states—Minnesota, North Dakota, South Dakota, Iowa, and Wisconsin—asked their PUC's and the governor's staffs at the same time to create a working group that could look at a renewable generation that would be needed as a group of five states to meet these renewable standards and then to start asking—not line by line, not to create projects—but broadly what kinds of transmission solutions are needed based on what's there and what we think

might be needed to deliver wind power to load to meet these requirements.

This group with this unfortunate name—the Upper Midwest Transmission Development Initiative—was created. UMTDI was the short form. This group was a governor’s representative and a PUC Commissioner from each of the five states working hand-in-hand, so a body of 10. MISO was there was the holder of data and a technical advisor and a body that could provide technical input on top of whatever expertise we have on staff. Long story short, in about a year and a half we looked at the legal obstacles—things like CapX, what are our options to expedite permitting as a multi-state group.

We looked at costs—we are charged with looking at cost allocation. How are we gonna pay for new lines. At the time MISO had two tariff choices to pay for lines—reliability lines that meet strict *[inaudible 32:22]* criteria had one method of payment. Then at the time they were called—I don’t remember what they were called exactly. They were called RECB 2 lines. They were economic development projects, had a different set of qualifying criteria. It seemed less likely that the projects we were thinking of wouldn’t fit into either of those categories, so how are we gonna pay for it? Is it something that we want the citizens of just these five states to willingly take on? Do we wanna work with MISO to amend their tariffing? What do we wanna do?

Then the third and the big piece is—how many megawatts are we talking about, and where is the wind in this five-state footprint? Is there logic to thinking about where the wind sites are that are likely to be developed and the cost of putting up those wind turbines balanced against the cost of putting in power lines to move the wind from where it’s generated to where it’s used. Specifically—if you think about it—in our footprint along the Buffalo Ridge from Iowa through Minnesota, South Dakota, and North Dakota, you’ve got this really good wind resource. We’ve got installed projects in North Dakota that are about 50 percent capacity factor. Those locations tend to be far from where the people are. If you choose to use—and the number was like 15,000 megawatts. We were looking at about 15,000 megawatts of new installed capacity wind. If you put all that where the wind blows its absolute best, you’re gonna need a lot of miles of transmission to move power from central North Dakota to the Twin Cities or Milwaukee or Des Moines.

You could imagine another alternative where you wanna minimize miles of transmission and you wanna put these wind turbines

close—whatever close means, you could define close—but close to the load. But when you put the wind turbines close to the load you're dealing with much lower capacity factors, so you need a lot more turbines but you don't need as much transmission. What's the best alternative? That's one of the questions we asked. It turned out there's a sweet spot which is a blend of the two. Put some of the turbines way out where you get the 50 percent capacity factor, put some close to the load. You can mathematically model the cost of the two extremes and the cost of this middle spot.

What we did is we had federally generated wind data, and we created energies—little ovals on a map that represented energy zones, places that seemed likely to be developed. We negotiated our way through a hypothetical of where the wind might be located. Then you can overlay that with a map of where all the transmission is now, and the engineers can tell you that, “Here's a broad corridor where you'll need to move wind from east to west or south to north,” or whatever the directions are. At the same time MISO was—or actually OMS, the regulators had taken on the task of working on this cost allocation problem for—another unfortunate acronym. This one is CARP, C-A-R-P.

Interviewer: Yep. I'm learning all the good ones.

Interviewee: Since CARP was starting almost the same time we were working on our project, we put the collection on cost allocation and let that one run in parallel. From CARP came a realization that we would need a new tariff to pay for public policy and mixed use projects. CARP looked at different ways to pay for that—highway/byway, kind of an injection withdrawal model and a variation on what we have now. They offered a bunch of recommendations to MISO. MISO accepted some. They modified a few, and then FERC modified some others. From that came the MVP tariff that is in place now.

The regulators had quite a role in trying to sift and sort the options. I think it was viewed that the regulators were—since you don't have a financial interest in this process, you have maybe a purer eye at what might be workable, actionable, reasonably equitable to those who pay the bills. At the end of the day, it's a tariff and a process that MISO used on this portfolio approach that allowed everybody in the footprint to see some benefit by having lines in their local regions come into play. Sharing the cost is one way to avoid this problem of—we're still seeing it today. If you want to simply pass power over the State of Minnesota because it's going from North Dakota to Indiana or wherever, how much burden should the rate payers of Minnesota shoulder for a project that

arguably doesn't bring much reliability improvement and not much economic development to the state?

This notion of courts—the courts have ordered that you have to demonstrate some rough approximation of benefit that goes with the cost, that the cost causers and the beneficiaries should align in some rough way. The courts said that this thing dealing with MISO is whole footprint and a portfolio approach, is adequate. It didn't make some people happy, but it's a way to carry out the FERC constructions and that it is roughly bringing benefit and cost into line. With those big lines, it becomes very hard to say that there isn't a reliability angle, even to the Brookings line. When we permitted Brookings, there was no way to pay for it. They didn't fit the reliability standard. It didn't fit the economic criteria. But when you ask the engineers to solve the transmission topography without Brookings in there, it wouldn't solve. It was needed, but it didn't fit the cost allocation buckets that existed. The MVP tariff was something that was necessary in an evolving world.

When you think about it, when MISO was created it was a whole bunch of central station plants. Renewables weren't any big deal at all. The queue for interconnection, folks envisioned once every few years a coal plant will go into the queue and require study. They're so big and you add so much in a lumpy, chunky bump that no one believed there would ever be a backlog of projects in the queue. Well, it didn't fix that, so the queue had to be reformed two or three times. It probably isn't surprising that cost allocation—which was similarly based on a view of central station and big power lines—would have to be modified at some point. Some point came with this MVP business. This business is always changing and evolving. The states are driving that change, and now the Feds are adding a new layer of change with the Federal policies.

It's hard for utilities. It's hard for MISO to be nimble enough to keep up with the pace at which state legislatures or federal agencies impose change. It's kinda like saying—it's sad to say but CapX was reasonably time thrifty. I think the MVP—which I would trace its roots back to this UMTDI, and then CARP thing and parallel was a way for the state regulators and MISO to partner and find a way to help solve these evolving business problems and to do it in a couple of years which is not bad by these standards. I think it was 2011 the MVP portfolio was approved by the MISO board. The benefit of those MVP projects it turns out so far to have been substantial. Again, you wouldn't be able to meet the Minnesota 25 to 30 percent renewable standard without these

things. You see that play out in other states that also have aggressive renewable standards.

Some way to incorporate public policy—which didn't exist when MISO started—is important and will continue to be important. It's gonna happen again. It's gonna happen more. That was a really long answer to a simple question.

Interviewer: [Laughter] Those are my favorite. You really did help explain a lot to me which has been great. It's really helped. It's great. I've spoken with about 20 people from all over, from everywhere, trying to get a nice range of perspectives. It's fun to watch 'em all line up as they're happening and getting the story from different angles. I'm just bragging about my nerdy summer research.

Interviewee: Yeah, I think this project's important because of the unique affiliation, and yet to tell the story you've gotta spin off on a few tangents. Context is really important to make sure people get the whole story.

Interviewer: My understanding has evolved—as it should have—of the project as I've gone along this summer. I've started along with the idea of wondering how unique this CapX group was. Where else in the country or in the region could benefit of something similar to this, but now I'm learning that—I think it was just a confluence of a lot of things at the right time that made the group so successful. Everything was in transition and shifting. There hadn't been transmission lines in Minnesota, big projects like this, for almost 30 years.

Interviewee: There's layers to this answer. In Minnesota the last big build-out came with toppling the power lines up in [inaudible 43:23] territory, so folks had to be mindful of not bringing that kind of—I assume we're tracing it to poor communication, but I guess I don't know—poor process, lack of process and communication. You can't make that mistake again. They knew that. The amount of outreach they did through mailings and meetings was really unprecedented. They didn't want anyone to be surprised and to feel like they had no chance to look at maps and talk about moving this or that. Anything that I did at the Commission that involved people's land is a very, very, very personal exercise. You have to understand that and not be cavalier about these kinds of things.

The second thing is I don't know that you'd have the partnership even formed in the first place in other areas. I don't know that it wouldn't. But that was necessary. Still it could only happen, I think, through this whole long story because you had states willing

to, in some way, collaborate or understand that this isn't necessarily a zero-sum game and that you can give a little here and take a little there.

North Dakota—at the time we started that UMTDI group—didn't really have a wind industry to speak of. I think they were wary of whether someone was trying to pull a fast one on 'em. “Are you trying to do something with the Lignite Council, and the lignite industry remains an important business up there,” and, “Are you trying to secretly cut the legs out from under our lignite?” As they start talking and they see the options and you have more conversations, if you can build—maybe not all the way to trust—but you can build this—it's almost like kindergarten. You've gotta socialize the group a little bit.

That was true at UMTDI. It was true at CARP. I did a lot of work with the EIPC and ice pick stuff on the Eastern interconnection. It happens over and over and over. People from the East Coast don't wanna hear that North Dakota is jamming wind down their throat. It takes awhile for them to realize that that's not necessarily what's going on here, that you're trying to be proactive, thinking about what it takes in a new world to have a grid that's reliable and economic, that serves all purposes. It's that people relationship thing that you have to replicate from the CapX partners to the states, to state agencies, [audio break 46:03] businesses involved, and the people paying the bills. It isn't a small matter.

Interviewer: Right, right. I think we had some good players that were around when this was formed.

Interviewee: Yep.

Interviewer: We're getting close to time. I wanna make sure to keep to under an hour, but I just have a few more questions. Since you have this very unique perspec—well, maybe not completely unique—that you were on the Commission, and you were also a landowner that was in one of the corridors. I was wondering what was one of the most interesting things that came out of public hearings that you dealt with as a Commissioner?

Interviewee: Nothing particularly unique to CapX. I think when you deal with people and their land, there's sort of a standard checklist of concerns—health concerns, the value of my property, the esthetics of looking at the towers at whatever distance, my rights as a landowner. I know that at one hearing a guy brought in the Constitution and held it up while he gave his speech. Those aren't new and aren't surprising. If you can't listen respectfully, and

those who are building the record or those who ultimately make the decision and have to explain why they made the decision can't explain—maybe not to every individual's satisfaction—but if you can't explain the rationale of why it's needed, why it's important, the value it brings at the macro and micro levels, why it's important that certain people are burdened in society to do this, then you'll never get buy-in or even acceptance.

Interviewer: Sure.

Interviewee: That's not easy to do. Those hearings tend to be emotional. They tend to be sometimes pretty raucous and contentious. That's totally different from folks who might say—there were interveners in the CapX process who always believed that this was really all about taking coal powered generation from central North Dakota and allowing it to freely move down to places like Chicago. They were never convinced that that coal country in central North Dakota also happens to be a spot where there's darn good wind resources, too. If people are dug in on a position like that and the record is built to a certain level of robustness and you still haven't convinced them, there is a point where you have to agree to disagree. People who get paid to make those decisions, make decisions. If it's based on the record, it's well supported by the record, then everything's fine. It's when you appear to be making cavalier decisions, fits your pet ideology—I'm pro-coal. I'm anti-coal. I'm—whatever it is. I'm all about transmission and nothing else. I'm totally supportive of industry, or I'm totally supportive of just residential rate bearers, whatever. You can imagine a thousand of these kinds of ideologic niches.

I think decisions that are well founded on a well conceived record stand the test of time. Communicating that to landowners can be hard 'cause their priority for acting is different. It's very, very, very micro. I understand it. I totally get it. The processes that we go through are really complicated. They haven't been designed for individuals to participate as fully as an applicant or a large intervener like the Sierra Club or somebody like that. It's a process that didn't envision having a thousand individual landowners dig in in a super duper meaningful way, the way the more traditional parties do. That can be very frustrating.

At the end of the day I know a lot of people who live near me who now have poles in their yards, and they're not necessarily thrilled with that. You ask. Most of them jokingly, but a few not so jokingly, say, "Well, why didn't you protect me?" I said, "Well, what did you want me to do?" What's the solution? Don't build the line? The record showed that the line was absolutely needed. The

more personal these things become and the narrower one's vision is, the less decisions occasionally make sense. Our job is to fly a little higher than that and to look at the whole package of costs and benefits and burdens and determine what makes the most sense to serve the need and then how do we balance to least inconvenience those landowners without respect to who they are individually necessarily.

Interviewer:

Yeah. Okay, a few more questions. I lost my train of thought. Oh, there it is. One of the things I was wondering about your opinion on was—if you think that the CapX lines and the CapX group would have been as successful as they were had it just been, say, Xcel or GRE (Great River Energy). Do you think they would have been able to be as efficient and get all these lines approved through the permitting processes?

Interviewee:

I tend to think no, at least for one obvious reason that the administrative efficiency of one need permit is gone. I don't know that the Commission would have been—I don't know either way. We're all speculating. If four owners of four of the five—or three owners of the three biggest lines had come in and said, "Hey, while you're doing Xcel's line, why don't you just do mine at the same time," I don't think that would have happened. The fact that they created this consortium where they had pooled data and all that other good stuff that let us do that. I think there was an efficiency there. Otherwise they would have teed themselves up sequentially. Resources being what they are, it would have been slower and more difficult for the state to process those three giant need applications all at the same time. I think that's a big difference.

Would they all have eventually been permitted? I would tend to think that yes. I would tend to think the record they established as a group would have been parsed out to be a record specific to a line number 1 and a line number 2 and a line number 3.

But the other advantage this consortium had is it really gave us a chance—reflecting back to where I started on this alternate year transmission report—it gave us a chance to look at how we could put in the biggest, most fundamental pieces of infrastructure the state needed for its grid in one shot, from one high perch. I think for folks in policy, that's a really great advantage. You always ask yourself, "What will the next piece be, and how are we limiting the choices for the next iteration based on the choices we make today?" It was a chance to say, "Putting in four lines—three really big ones—at one time unleashes all kinds of economic and policy opportunity." We can see that now. What gets tacked on to it tends to be the slightly smaller pieces of infrastructure and the generating

pieces. It's almost easier for someone with a limited vision of the future to imagine that there's good things that can come out of this plan.

I don't know if that's a super tangible thing to put in there. It's one of those vision arguments you'd put in your application somewhere. But I think there is some merit to that. In the same way, that's where this biennial transmission plan offers us that—a lot more granular detail with a whole lot more projects. I will say, there's a lot of stuff in that biennial plan that doesn't necessarily get developed in the year or the two years that it's laying there. This is a more tangible point to say, “Public policy and economics demand this. Here's one opportunity, one package to get to the end of the line. What do you think?”

Interviewer: We'd be remiss to not take the future into consideration when developing these large infrastructure changes. Yeah, it's hard. It's intangible, but, yeah.

Interviewee: We do 'cause we're looking at future load forecasts. We're trying to anticipate policy changes. But it's a tough job. When you wanna look at a generating plant and you've got—in 2008. If you asked what's the future of the generation in the U.S. look like for 2007? Well, coal was still there. Gas was super expensive. We were about to start a nuclear renaissance, and wind was growing but kind of a niche piece of the whole conversation. You go to 2012 and fracking came online. Gas is now much more abundant, much less expensive. Nuclear's—Fukushima happened, so the public appetite for nuclear changed, at least domestically. Coal and carbon policy evolved relatively quickly. How do you predict the future? The future you would have predicted in '08 is different than the future you'd predict in '12 which is probably different than what we're working on today.

The answer is you look for transmission systems that are robust in all kinds of futures. You're looking for the no-regards package that you can say, “Where we envisioned not just a wind zone, but an energy development zone, might mean there's also gas pipelines in that area, so that if you wanted to put peakers out near the wind you could, or, if you don't put wind out there you might put a gas plant out there.” It's also adjacent to rail lines, so if you do decide to use coal you can get delivery.” Things like that, you're trying to look for investments that live and survive and prosper in as many of the futures as you can conceive of. That's what—I would guess that was a speech that I made more or less in the CapX thing. This looks like a plan that's beneficial and robust, not just with the vision we see today that the record might have been most narrowly

focused on, but the potential of futures that we could conceive of going forward.

Interviewer: Well, we are right up at the hour mark. I was just wondering if there was anything else that you'd like to add that you didn't feel like you had a chance to talk about, or if you have any other questions for me.

Interviewee: No. You just got the stream of thought dumped out of me. I said a lot more than I imagined I was going to.

Interviewer: Well, I appreciate it. I do.

Interviewee: No problem.

Interviewer: This was a real pleasure. I really appreciate you giving me your perspective on all these things.

Interviewee: My pleasure, and if you need to dip back in let me know. We'll find the time.