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Natural Resources Committee
October 07, 2011

[LR314]

SENATOR LANGEMEIER: The Committee on Natural Resources met at 9:00 a.m. on Friday, October 7, 2011, at the State Capitol, Lincoln, Nebraska, for the purpose of conducting a public briefing on LR314. Senators present: Chris Langemeier, Chairperson; Tom Carlson; Mark Christensen; Annette Dubas; Ken Haar; and Jim Smith. [LR314]

SENATOR LANGEMEIER We appreciate everybody coming today. Do you want to come join us? Come on up. You might be able to see the screen better out there. I might have ruined your view, but...I'd like to welcome everybody here today. Again, we are here to start into phase two of the LR314 process. This isn't a typical public hearing. This is kind of a briefing. All the committees are going to give us some background to what they've been working on, and they've all be working so diligently. And with that I was going to introduce the committee, but I think everybody knows everybody here. We do want to welcome Senator Harms for making the trip down to...this is a dear subject to him as well, and I appreciate him coming and sitting with us today. Want to start off by thanking all my colleagues on the committee and their staff. Their staff has been a crucial component of this. I thank them for letting us rob them all and without them we couldn't get to where we are today. And they've just done such a great job. And the communication has been great. And they've even taken this to a level that I couldn't of dreamed of. So, I want to thank the staff members for each committee; they've been fabulous in gathering the data and putting it together. I also want to thank all our working committees and their coordinators for continuing the e-mail and sending out and saying, hey, we need some results and pushing. Not only do I hear a lot of feedback for my role here, but as I'm out and about. I'm hearing from individual people, have a tendency to give us a little more information when they see me on the street versus when they see me in a room like this, so as I've traveled around the state I've gotten a lot of great feedback and we appreciate that. We're going to start off...we have the presentations from each group. They're going to give a 15-minute presentation and

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then leave 15 minutes for questions, if there are questions from the committee here. When we're done with this, we'll present on our e-mail list, we'll present...everybody will get copies of what we have. Like we always do, we'll e-mail it out. Some of these presentations we might have to take some of the color background out, or something, to get these files just a freckle smaller because some of the PowerPoints are pretty good size. So to get them to go through our e-mail server, we might have to modify them a little bit, but we'll do that. We'll get them to a simpler format for that. A couple things I want to talk about is there's been some discussion out there as when this is all going to be done. I just want to remind everybody, we're going to proceed through this as quickly as we can. But in the agreement with LR229 and LR314, December 1, 2012, is our actual deadline. There's been some question out there what that was. That is our actual deadline. We hope to continue this process and get ahead of that by a long ways depending on what other little issues that pop up before the Natural Resources Committee in the next months. Is there anything else that I didn't cover that you think I ought to start with? (Inaudible discussion from staff member.) We'll kind of do that at the end. We're going to talk about where we go from here. She has it on here for me to talk about it now. I'm going to move that to the end of the presentations to what we're going to do next. I'm going to kind of wait to see what some feedback is on this. If there's some areas we need to address a little harder or questions arise in one particular section, I kind of want to leave that open so we can go back and address that if we need to. But our intent is to take this from these presentations to create this into one particular document of information which will allow us into the next step to start looking at where future funding sources could be and how problematic or nonproblematic it will be to get to those. So with that, we're going to move to our first group and Dave Sands is the coordinator for the first group and he's going to come up and give his presentation. We are going to record this just because it's a habit we have, so we are going to do that. So if you come up in groups, I know some of the groups...whoop, about give me a heart attack. (Laughter) But anyway, as you come up, if there are multiple people in your group, we'd just ask that you don't have to...one doesn't have to do all the talking, then the next one do all the talking, we can handle some interaction. But we do...make sure

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you don't talk at the same time. If you talk over each other, that...the transcribers write me nasty letters. And so...they fit in with the other ones I get. But anyway, I don't want those. So with that I'll turn it over to Dave Sands and we appreciate...and you just have to hit "enter." [LR314]

DAVE SANDS: Enter. [LR314]

SENATOR LANGEMEIER: Yeah, or "return" or whatever it says and that will move you right through it. [LR314]

DAVE SANDS: Thank you. Good morning. My name is Dave Sands and we're with the Water Basics subcommittee. And the first thing I want to do is say that as the coordinator of the group, the benefits of that was that I got to delegate most everything. And so most of the people on that list did a lot more work than I did. So I want to thank everyone on that list. And a couple of people who aren't on that list, Jim Goeke, who provided some great slides and also David Kracman who provided some slides. So our first question was where did our water come from? Well, this probably won't come as a great surprise to you all, but it comes from the sky, comes from precipitation. It comes from the hydrologic cycle where water falls from the clouds as rain or snow, flows into rivers and streams, soaks into the ground, picked up by plants, evaporates and then forms more clouds and precipitation. In Nebraska we do have a lot of rivers where runoff ends up in the state and so there is a map of Nebraska's major river basins. The one thing about Nebraska that is important to realize is that we're a very diverse state in terms of moisture. There is a good fact for cocktail party is that there is a greater diversity of rainfall from eastern Nebraska to western Nebraska than there is from eastern Nebraska to the east coast. And so one size does not fit all in Nebraska when it comes to water and precipitation. I mean, in one season we go from fairly moist and subhumid to fairly semiarid. That is the average annual precipitation in Nebraska since 1895. And I just joke with my friends that the average Nebraska's is just the midpoints between the extreme which is just really the norm. And you see a little bit of that on the

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graph there. You can see there's a lot above and below average annual mean precipitation. Also the thing about Nebraska that I realized is that things run in cycles and draughts run in cycles and they tend not to be short. They tend to run for multiple years. And I assume they've gathered this data from core samplings which goes all the way back to 1220. But you can see the duration of drought is usually multiple years and sometimes many years. So how much water do we have in this state? This is an important graph because what it shows is that nearly seven times more water flows out of this state than flows into this state. And so Nebraska is a state that does get a lot of precipitation and has a lot more water flowing out than we have flowing in. You can see the difference. The green bars are the inflows; the blue bars are the outflows. This is another way of looking at the volume of water in our rivers and streams. The wider the blue line, the more the volume. And by the way, this slide presentation is going to be available in print for anybody who wants it. But there you can see that...get down to the Lower Platte, the Elkhorn, your amount of water in those rivers really increases. This is a bit of an old slide but we think it's still fairly accurate which is basically a pie chart of the High Plains Aquifer or the Ogallala Aquifer. And it shows how much of that water is in each state. And you can see Nebraska has the vast lion share of that at 66 percent. This is a map of the High Plains Aquifer, or the Ogallala Aquifer as it's known, and the saturated thickness of the aquifer. And you can see it almost pinches down to nothing in Kansas where the Arkansas River comes in there. But you can see up in Nebraska, it's not only the vast majority of it, but also the deepest portions of the aquifer, the deepest saturated gravels. There's a more close-up map of Nebraska that shows the depth of the aquifer in Nebraska in that dark blue is areas where the aquifer is the deepest. And at the center of the Sandhills, which you might expect, I think when it rains on the Sandhills and soaks into groundwater. So how much of this water do we use in Nebraska? This is a chart on fresh water withdrawals and populations in Nebraska for 1960 to 2005. The thing I want to point out about this graph, you know, it seems to suggest that as population is increased the total water withdrawal would increase, that's a correlation, it's not a causation. It's just kind of coincidental that our population has climbed as our water use has climbed, because in Nebraska most of our water use is

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going to agriculture. It's not related to... [LR314]

SENATOR LANGEMEIER: Need to talk that way so we can pick you up on the mike.
[LR314]

DAVE SANDS: Oh, sorry. [LR314]

SENATOR LANGEMEIER: Not disrespectful for them, but we want to get it on record.
[LR314]

DAVE SANDS: Okay. So at any rate, that actually shows that our water use has been increasing. This is our groundwater depletion out at the High Plains Aquifer. Again, it's an older figure, but it's still probably pretty close. You can see Texas which had the shallowest portions of the aquifer has had the greatest depletion. And Nebraska is at zero. And that doesn't mean there hasn't been depletions in some area, it means those depletions have largely been offset by increases in other places. But Nebraska is faring far better than our neighbors in the High Plains Aquifer. There's another map of the depletions of the High Plains Aquifer and you can see those red areas down in Texas where it's been the most severe and very few areas in Nebraska where it is showing depletions. This is groundwater level changes in Nebraska from predevelopment to the spring of 2010. And you can see most of the state is not experiencing groundwater level changes. Some parts of the state have experienced groundwater increases. You'll notice south of the Platte there, that would be the groundwater...what's referred to as the groundwater mound near Holdrege, and then, of course, in the southwest part of the state where depletions are a little bit more severe and then up in, I suppose that's Dawes County, or Box Butte County. This is another map, a more recent map, over the shorter time frame, groundwater level changes from the spring of 2000 to 2010. And you can see in that time period there were some depletions in the groundwater table. But again, remember that things run in cycles in Nebraska and the last three years have been pretty wet. And so this is a map of the last three years of the groundwater in

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Nebraska and you can see groundwater has increased, actually, groundwater levels have increased in much of the state, although they still dropped in some areas. So what do we use water for in Nebraska? This pie chart shows total estimated water withdrawal, this would be surface and groundwater. I think you can see that the lion share is the groundwater irrigation and surface water irrigation. And the other things are fairly small pieces of the pie. And by the way, if people are wondering what mining is, that would be like gravel mining. This will be total water use including power production. The other one didn't include power production because power production, generally, when you're using cooling water, the vast majority of that goes back into the river system. But if you were to include power cooling water, thermal electric power, that's what the chart would look like in terms of withdrawal. But like I said, most of that green slice gets back into the river. This is estimated total surface withdrawals by category. And so this is just the surface water. And again, you can see irrigation is the big part of that pie. Mining is another slice; public supply is a bigger slice, and then there's everything else is pretty small. And then again, with...that's the first pie chart is without thermal electric power; the lower pie chart is with thermal electric power so you can see if you include that. It's quite a big piece of the pie. But again, that water gets back into the streams. Now this is the total groundwater withdrawals in the state and you can see, again, 94.7 percent is for irrigation. And the rest of it is, you know, public supply is the next biggest slice, although still fairly small, and the rest is fairly thin. These are irrigation water withdrawals in Nebraska in the last 40, 50-some years. And you can see groundwater, surface water, and the total withdrawals for irrigation in Nebraska. As you can easily see there, irrigation has been increasing. This is a map a lot of people like to throw up, you know, the growth of irrigation wells in Nebraska. The one thing to remember about the number of irrigation wells, in some part of the state, it may take three irrigation wells to irrigate one center pivot, or use one center pivot. And so, you know, this...in some parts of the state, the number of irrigated...what's more important is the number of your acres irrigated, not the number of wells, would be the take-home message from this slide. And to get a handle on how many...since acres irrigated is the most important figure, the NRDs of the state have actually started certification of their

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irrigated acres. This is the NRD map of Nebraska. And groundwater-irrigated acres in Nebraska, this is August, these are very recent figures. I want to thank John Turnbull for gathering this information. But you can see the types of irrigated acres and where they're at. The red areas would be irrigated acres in overappropriated areas. The blue, dark blue, would be the fully appropriated areas where there's irrigation. The lesser colored blue would be areas subject to LB483, irrigation growth restriction. That's where a designation...land has come out of the designation and there's restrictions on how much new irrigation there can be after that area comes out of a designation. And then the 33 percent green slice is irrigation in areas where there are no currently restrictions. These are the groundwater acres, irrigated acres, listed by natural resource district. And as you can see, the Lower Platte South is the least, and the Upper Big Blue has the most and everything in between. And these are our certified acres. The NRDs have been very busy getting a handle on their certified-irrigated acres. This is divided by river basin. So you can see the number...the amount of irrigation...groundwater irrigation by river basin. And you can see the Upper Platte, and Blue, the Republican, the Loups, the Elkhorns, those are your main slices of that pie; a little bit on the Nemaha. Again, these are certified and estimated groundwater irrigated acres in Nebraska. Looked at by the bar chart is by river basin, just a different way of looking at it. And the other pie chart is the status of NRD certification of groundwater irrigated. And you can see they're getting very close to full certification. Sixty-nine percent has been certified; 21 percent is in progress. The balance is 10 percent. And I should point out that the balance where the acres have not been certified are probably in areas where there are no problems and that's why they're not rushing to certify. And so most of the acres in the areas with issues have been certified. Another important use, of course, for water in Nebraska is municipal use. I want to thank Lash Chaffin and the League of Municipalities for gathering this information; 116 communities surveyed representing about 86 percent of the urban population, or about 1.2 million people. Commercial and industrial use varies greatly by communities, so we didn't find any overall connecting thread there. The annual water use is 84 billion gallons plus; average per capita daily use, 193 gallons. And then it is important to remember that with municipalities, some of that water also

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gets back to the river. It's not all consumed. Some of it gets back to wastewater discharge. This is a 10-year average of municipal use. And it kind of shows overall how the commercial and industrial breaks out versus domestic and other uses. And another domestic municipal use of water in Nebraska, rural water districts. And you'll notice the rural water districts are largely clustered in the glacial till region of Nebraska. This would be areas where groundwater is spotty and hard to find. And that's why you get rural water districts in that eastern one-quarter of the state. And then of course, another use that we would be remiss if we didn't point out is wildlife. And it's not just the threatened and endangered species that were depicted on this map, of course, the central flyway comes through Nebraska, millions of ducks and geese, and it's an important wildlife resource for the state. And so although the wildlife don't consume water, they certainly use it. So what does beneficial uses mean in Nebraska? We hear that term a lot. Well it is defined in statute that all water appropriations must be for a beneficial use. And under the statute the term is defined, it states, beneficial use means that use by which water may be put to use to the benefit of humans or other species. And if an appropriator fails to use the water for the beneficial use specified in their permit for more than five years, the water right can be cancelled by DNR. And that's sometimes referred to as the "use it or lose it" clause. Another beneficial use is spelled out in the service and groundwater statutes. And here it actually sets preference. The preference is different than beneficial use. Preference actually sets preferences for the beneficial uses. And in this you can see that domestic purposes has the highest preference, and then agricultural, and then manufacturing. And the same is true in groundwater in terms of preference; it goes agriculture...or domestic, agriculture, and then manufacturing. Oops. Going to get back to that last slide. This statute is the instream flow statute. And the instream flow statute for surface water does say that the instream use of water for recreation for fish and wildlife shall be considered a beneficial use of water. I should also mention that surface water for incidental recharge of groundwater supply is also recognized as a beneficial use in statute. And I believe that was put in statute to both recognize that water was being...groundwater was being recharged in the central part of the state and that also the Lower Platte needs surface water in the Platte to recharge their municipal well

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fields. But surface water for incidental recharge is another beneficial use in statute. So what uses are not considered beneficial according to law? It's a good question because there's differences between ground and surface water as you just saw. It recognizes fish and wildlife in the surface statutes, but not the groundwater statutes. So perhaps a question for you all is should those statutes be harmonized in terms of recognizing beneficial use? Another one of our questions was, can we identify water usage by each of the following groups? And the only thing we changed, basically, the answer is yes. Except that on the third bullet on the right side, it originally said conservation and we thought fish and wildlife was probably a more appropriate term to use there. Now this one brought smiles to the faces of some of our members because we start out by saying in what ways does the federal government regulate our water? And well the answer is, generally, the state is the top dog in water rights except; and I got a long list of bullets here. And you can see, federal funding for new water construction projects must adhere to certain standards. National scenic rivers and federal lands claim to have an implied surface right that preserves those resources protected by Congress, also known as a federal reserved right. Endangered Species Act can have ramifications for our water. On the Missouri River the U.S. Army Corps of Engineers regulates water for the master manual. The Army of Corps of Engineers authority over draining and filling and disturbances to wetlands and water. The EPA has authority over water quality through the Clean Water Act. Bureau of Reclamation has some authority over projects that it controls. The conflicts over interstate compacts and decrees could be settled in the Supreme Court. Federal Energy Regulatory Commission can exert authority through licensing of hydro power projects. Nuclear Regulatory Commission will look at impacts to aquatic wildlife and the relicensing of nuclear power plants. The federal Water Pollution Control Act, or the Clean Water Act; Energy Independence and Security Act; Safe Drinking Water Act; underground injection control. And so with that I'd be happy to answer any questions. [LR314]

SENATOR LANGEMEIER: Committee? Yeah, Senator Smith. [LR314]

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SENATOR SMITH: Yeah, thanks. In the preference for use, you said domestic, agriculture, and manufacturing; where is public utilities in there? But then later on I saw a long list of users. And how do you classify those into those three preferences? [LR314]

DAVE SANDS: I'm going to...John. [LR314]

JOHN TURNBULL: (Inaudible) on me. [LR314]

DAVE SANDS: Yeah, you may as well just sit up here because (inaudible) everything. [LR314]

JOHN TURNBULL: I'm John Turnbull, general manager of the Upper Big Blue at York. The preference statute lays out just those three categories; the domestic, the agricultural, and the industrial manufacturing. And so power production would be under the industrial. What was your...maybe I didn't quite get what you... [LR314]

SENATOR SMITH: Specifically the generation of power and that would fall under the manufacturing. [LR314]

JOHN TURNBULL: Right. [LR314]

SENATOR SMITH: Okay. [LR314]

JOHN TURNBULL: That's the way I understand it. [LR314]

SENATOR SMITH: Thanks. [LR314]

SENATOR LANGEMEIER: Senator Carlson. [LR314]

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SENATOR CARLSON: Thank you, Senator Langemeier. Dave, I'm going to ask you a question and it's not because I'm trying to put you on the spot, but we're supposed to ask questions, not lecture. Who owns the groundwater in the state of Nebraska?
[LR314]

DAVE SANDS: Oh, I'm not an attorney, but I believe the law says the waters of the state, but someone please correct me if I'm wrong on that. [LR314]

JOHN TURNBULL: It's considered public ownership. [LR314]

STAN STAAB: People of the state. [LR314]

SENATOR CARLSON: And the state has jurisdiction over groundwater because nobody, no individual owns the groundwater, they own the beneficial use to that groundwater. So John, that being the case, and we have...out of necessity we have a lot of regulations and we have legislative action, we do things to manage the water. If the state owns the water and water is to be available for beneficial use and agriculture has a priority, would it be fair to say that every farmer who wants to use groundwater ought to have an equal access to a portion of that groundwater regardless of the timing? And does it open up a lawsuit if...I've got a quarter of land, I don't have a well on it. But I think state law says that I have a right to a portion of that for beneficial use in agriculture and I want to drill a well. And if you don't let me, I'm going to sue. I'm surprised this hasn't happened. [LR314]

JOHN TURNBULL: Well first off, groundwater is handled under the correlative rights doctrine which is "share and share alike." Which is opposite of surface water which is under the appropriative system "first in time, first in right." I think, though, by regulations and by the statute that authorizes the NRDs to have regulations, we can restrict areas where, as you say, somebody may have a quarter section of land and does not have a well, therefore does he have the right to drill? Well, he does provided area is not closed

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to drilling. Now, because of LB962 that was passed some years ago of fully appropriated and overappropriated considerations, when you get into a fully appropriated situation, then you cannot have any expansion of water use. And so I guess that leads back to your question, why hasn't somebody raised a court issue on that? I don't know. Maybe I should have gone to law school instead of studying agronomy. [LR314]

SENATOR CARLSON: Well it forces us to do some things in the state that we'd rather not have to do. [LR314]

JOHN TURNBULL: I have worn a black hat for 30-some years in this business and yes. People do not like to be restricted in what's going on. [LR314]

SENATOR CARLSON: Now, it's interesting what you presented here, Dave. And the fact that we've got seven times more water flowing out of the state than into the state, and seeing what's happened this past year, I don't know when we can find a better time to talk about...not whatever it costs, but if we could...if we could change things a bit so that we could manage some of that water that's flowing down the Platte and into the Missouri that where they don't want it, they don't need it, and it's going to be years before much of that farmland is able to be used again in a positive way, that we need to be able to discuss how we can transfer excess flows out of one basin into another, why wouldn't we want to do that? John. [LR314]

JOHN TURNBULL: In the Upper Big Blue we had a proposal years ago to do just exactly that. Ended up in Nebraska Supreme Court and we lost. [LR314]

SENATOR CARLSON: And the court's not... [LR314]

JOHN TURNBULL: Politically I don't think we can overcome it. [LR314]

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SENATOR CARLSON: Well, and that's a shame, because there's a lot of things happening. We've got bickering on the pipeline and a lot of that has to do with federal regulations and them getting in a position where we can't do what's right for our people, transfer water, I think, is one of these things. Another thing that, Dave, you brought out that I think is really, really important and you look at groundwater depletion in Nebraska as compared to other states and you have zero. Now it's not quite zero, but we haven't, overall, lost much of our supply. And we want to make...and so that statement, we don't want to take that as saying we don't have a problem, because we do have a problem. We've got to manage what we've got so that 20, 50, and 100 years from now we're still at zero or close to zero. And if we do that, we're going to have wealth opportunities for agriculture in Nebraska that are unending. And that's my story and I'm sticking to it. Thanks for allowing me to bring it up. [LR314]

SENATOR LANGEMEIER: Senator Haar. [LR314]

SENATOR HAAR: This is a really technical, but some places they show a difference between the High Plains and the Ogallala Aquifer, is that one in the same? [LR314]

JOHN TURNBULL: Well, in general terms they are, but when the geologists talk about it, they do have some distinct differences. As an example, the Ogallala Aquifer stops probably in...I'm trying to remember the map, Adams and Hamilton counties as you come to the east, but in Hamilton and York counties, we still have very good water supply, but it's what they term the High Plains Aquifer. It's a little bit different sand and gravel formation. That would be a great question for somebody like Jim Goeke, because they can explain that really well to all of us. [LR314]

SENATOR LANGEMEIER: That could be a whole-day project. (Laughter) I've been there. [LR314]

JOHN TURNBULL: It could be. But it's a geological definition difference that's going on.

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[LR314]

SENATOR LANGEMEIER: It's tough to get 40 years in 10 minutes. [LR314]

SENATOR HAAR: And then the use it or lose it. That sounds like a self-defeating policy. I don't know. How is that played out in Nebraska? [LR314]

JOHN TURNBULL: Well that's a good question for the Department of Natural Resources, because I'm not in the surface water administration. [LR314]

SENATOR HAAR: Okay. And that's with the surface water, is either you lose it... [LR314]

JOHN TURNBULL: Yes. That applies to surface water regulations, yes. [LR314]

SENATOR HAAR: Okay. [LR314]

SENATOR LANGEMEIER: Any other questions? Seeing none, gentlemen, thank you very much. I'd like to recognize Senator Avery has joined us and Senator Hadley was here and has been in and out a couple of times has joined us. Now we're going to move on to Group 5 which is "available resource and data resources" and Rachael Herpel from the University of Nebraska is going to give that. I'll cut back, bring my own equipment here. About knocked my own personal laptop off (inaudible) about gave me a heart attack. [LR314]

RACHAEL HERPEL: Thank you for allowing us to go earlier in the queue, but I think it actually works well because a lot of what...I'll just talk about availability and then the details of what's available, I think, will be covered by some of the subsequent groups. And also I wanted to mention that I can provide an overview, but some of our other group members, Dennis Schueth with the Upper Elkhorn NRD, Tim Anderson with

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Central Nebraska Public Power and Irrigation District is here. Roric Paulman with Paulman Farms joined the group. And Bruce Dvorak is here in case you have specific questions about the university. Now, if you have questions... [LR314]

SENATOR LANGEMEIER: They can come up if they want. [LR314]

RACHAEL HERPEL: (Exhibit 1) If you want...otherwise I can...it's as needed. So, I guess at this point what I feel like we've compiled and have tested our access to a variety of what's available as far as research and data and studies. And so what I'm going to go over is just our brief response to the questions as they were put to us. So, the first couple of questions were specific to the DNR. And so they answered those questions and a lot of what is happened is during the course of this is tables and a lot of information was compiled. And so they put together a table of, in the past five years, of what they've done related to integrated water management planning and water. And so I think that reflected what is available from them. And as far as how it's...it really...when I just glance at it, it seemed to really focus on generating a better understanding of water movement use in Nebraska. And so as far as funding and how it's conducted and for what purpose, I guess the...it was really a collaborative...a lot of these...this research and studies are done collaboratively. So there's the staff time at DNR, there's federal funding, Bureau of Reclamation on the Niobrara is an example right now, environmental trust funds, and a lot of partners funds are in-kind support, makes these studies and research and data collection possible. This was a direct question to DNR and so they answered it and I didn't want to mess with their language at all, so it's all up there. But I guess it's a...I guess I will read it. It's integrated management planning duties, the department collaborates with its partner agencies in assessing and evaluating available, credible, and applicable data and science in the context of their joint goals and objectives. For instances regarding duties that are the sole responsibility of the department, it relies on its staff of engineers and scientists, with occasional assistance from outside entities or authorities in pertinent fields of expertise to assess and evaluate available, credible, and applicable data in science in the context of its responsibilities

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under the law and in accordance with its rules. So there you have it. As far as the natural resource districts, again as part of this effort, they were compiling data and it became apparent that some of the data...what they were compiling for the other groups applied to our group as well. So I call it Table 2, but its basically their list of what they've done as far as research and data over the last five years. And if you need to go back further, we need to go back further, I think that's something you need to let us know. But as far as that in general, when I look at the table of what's available, it really...you can see, you know, depending on the local needs of that district, you know, they do research and studies and data gathering according to their needs. But also there's, you know, this better understanding the resource, managing the resource; if I had to put some broad labels to it, and promoting water-use efficiency, and improving water management. They're all themes when you look at that table is what is apparent. For what purposes are the NRDs required to do research? Basically, I guess, in the groundwater protection, in Chapter 46 of the Groundwater Protection Act, that's where the NRDs are...their responsibilities are really spelled out in that legislation. I don't have a copy of it, but I think we saw that with the other group. As far as other entities and what they do, as far as conducting water research, you saw in Group 1 a lot of the maps and whatnot was USGS. So on the federal side, USGS is quite a bit. They put together a...I asked them, so what do you have, you know, as far as water in Nebraska? And they gave me a long 120-some pages of studies and data sources and resources. So depending upon what's really needed by this group, we really have, you know, it's at our fingertips, we just need to know what form and what you need. As far as other universities, you know, there's some question of, you know, other universities doing research within Nebraska or on the Ogallala and so...and how that's done. I kind of used our UNL faculty as an example of what funding sources are available to universities in general. And so I have a list of all those available sources in-depth if you'd like to see those. As far as how these projects are run and how are they funded? There's a whole system of funding agencies and project officers and those project officers then direct the research. I will point out then in a lot of cases, these federal funders require state or local match to make sure that those funds are available to do the research and data

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collection and whatnot. So our capacity as a state to have that match available either by state or local, even sometimes privately, is fundamental to actually getting the work done. So that's pretty key. As far as how these research projects are shared. You know, a lot of it is public information. Now we have the benefit of the Internet so we can go and, you know, you just have to dig for it a little bit, know what you're looking for. If you ask for it, you know, it's pretty much...since it's publicly funded, you can get it. And there's this question of when is it done? When is the research...there's a bow on top and it's all available, you know, and in what format, so. I think it's just a process of working with the research entity to get it in a format that we can use it. Why might it not be shared? I think when there's a lawsuit, I guess, that was the first...this was the question we answered back in July that when there is a lawsuit available that it just may not be able to be made available to the public. And it may not be applicable, and that was another answer. And so when it's shared again when there is interest. You know, I've been in many an office where I'm like, can I look in your file cabinets for things? And so I think when there's a real rational reason and a genuine request for information, the partners here in Nebraska are providing that. As far as the university and its role in meeting the state's research obligations, I'm able to, you know, access quite a bit of detailed information about the university's research through the office. I have a lot more information about UNL, but could get information for UNO, UNK, and the Med Center if that's where you want us to go with this. But there's a table, you know, again, hundreds of pages there going back ten years. And I can go back further if that's a need. And also kind of divvy it up between federal sources, states sources, contracts, you know, however you want to slice and dice it, we can provide that information. And I just wanted to touch on this. This is a...kind of the role of the university and research in general, is data. I guess data collection and being able to go through and just collect the data. The university plays a role in warehousing a lot of data. An example is the High Plains Regional Climate Center with a lot of the weather stations around the state and the region. You saw quite a few maps and data from the conservation survey division. And in 2005 we have a center for advanced land management and information technology (inaudible) and they worked with DNR to...funded by DNR to do a land-use map for the

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entire state. SO that's just an example of where data collection is one of those and statewide is one of the things that the university does. And then using that data to work that into give relevance and purpose to the data by interpreting what the data means. So that's where you get those groundwater level change maps and actually, you know, you have all these data points across the state and then what does it really...what does it mean? And then as we understand, you know, what that means and begin to synthesize it, that's kind of what we're doing here is we're getting more knowledgeable about the subject matter and what...then that leads to another process, what do we need? You know, what...do we need better methods? Do we need more data? Do we need to amend our laws? And so it's just this continuous process of going through. And so we actually have a political science professor that studies what we're doing here as far as this process and how it can be maximized, the results there. And this I couldn't help it, I mentioned to Jim Goeke, you know, that I was going to include one of his...this is from the same paper that our political science professor, but you hear from Jim all the time that this process is continuous and what we're trying to do is improve our knowledge base and kind of the wisdom of our decision making. And so I think what we have here is a lot of available information, a lot of data, and we're just trying to work through it to improve the outcomes. So, with that I thought...I really wanted to be brief, and so I hope I was able to achieve that. Any questions? [LR314]

SENATOR LANGEMEIER: For a subject that could have got pretty deep, that was good. Are there any questions? Senator Carlson. [LR314]

SENATOR HAAR: Go ahead. [LR314]

SENATOR LANGEMEIER: Senator Carlson. [LR314]

SENATOR CARLSON: All right, thank you, Senator Langemeier. Rachael, appreciate your information here and I really think that the university is going in the right direction and Innovation Campus is an exciting possibility for our state and focusing on food, and

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fuel, and water is the right way and it fits into agriculture in Nebraska. And so I think that the investment made by the state in this current budget to that end is a good investment. But I want to ask, and I don't know if you know this or not, is it true that Michigan State has a grant to study groundwater in Nebraska? [LR314]

RACHAEL HERPEL: True. It's the aquifer as a whole. So not just Nebraska, but other states as well. [LR314]

SENATOR CARLSON: Okay, then you go to your slide that indicated in some cases federal funders; and I don't know where this funding...do you know where the funding is coming for Michigan State? [LR314]

RACHAEL HERPEL: It's the National Science Foundation. [LR314]

SENATOR CARLSON: So it's not the federal government. But federal funders require or prefer that those funds be matched with state, local or private dollars. And so from a layman's viewpoint, obviously Michigan State has the freedom to go after whatever grant money they want, but why are they doing that here and not us? We're doing it, but maybe we should go to Michigan and get a grant and study their water. [LR314]

RACHAEL HERPEL: Yeah, yeah, it's...I guess I can respond by saying there's a lot of history. Once a...the...I know, for example, the PI for that project; he was here back in January and spoke at the NARD conference. He has a long history of funding and being successful at getting National Science Foundation grants. And so I think that built, you know, his reputation with that funding agency. Also, a lot of the federal funds are...they need locations in which to do those projects. But it needs...the methods and the processes they develop as part of their projects need to be broadly applied. So, because it is a federally funded project, it has a more of a national scope. And his work that is being done in the Ogallala Aquifer could conceivably be done in a way to apply to other aquifer regions is kind of how I would explain it. [LR314]

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SENATOR CARLSON: Do you think in this process there will be any attempt to...made by Michigan State to consult with the University of Nebraska in their studies? [LR314]

RACHAEL HERPEL: I have not heard them do that yet. But I know there's a research team from Michigan State and they have colleagues at Illinois, I think, and I just talked to the...one of their colleagues, Stephen Gasteyer from Michigan State was just here in Nebraska Wednesday and I spoke with him. And, you know, it's, again, their willingness to share what they're doing and having it be a collaborative process. So it's not...but it takes, as you know, a long time and to work through the process. So I don't think they've been as collaborative as we would like, but. [LR314]

SENATOR CARLSON: Okay. Good, honest answer, thank you. [LR314]

SENATOR LANGEMEIER: Senator Haar. [LR314]

SENATOR HAAR: I'm not quite sure how to frame this question, but when you talk about research, a real easy thing is how we use water, and that was shown in some slides on the last. What are some of the other categories besides how we use water that the university and these other entities are doing research? [LR314]

RACHAEL HERPEL: I guess one of the things that I...you know, when this started I had very grand visions of being very encompassing. And one of the areas that we have, it's included in, but not explicitly, is all the research that's going into habitat and wild life and the instream flow needs and how to go about...I did not know until I was in the school of natural resources the methodology that goes into snagging Pallid sturgeon, for example. I mean, it's...it's a...a lot of it is the data collection and the methods of even collecting the data that faculty concentrate on. And so when you collect the data, you know it really reflects the reality of what's out there, because you could do fish surveys and just because of how you did it, you may not be reflecting what's actually out there. So I think

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that's a big part of what the university does. [LR314]

SENATOR HAAR: Okay, then, I've been an admirer of Senator Carlson and what he did with invasive species and so on. So when something like that comes along, how does that interface with the university? I mean, does somebody call somebody and say we need to study this now or how does that work? [LR314]

RACHAEL HERPEL: I think, and I came to the university after that initiative was kind of started, but I know that, you know, one of the first things, you know, as far as...part of a research project is what is available. A literature review, basically, of what research is available, not only what's being produced by the University of Nebraska, but elsewhere. And so there we found, you know, there's quite a bit of research on invasive species from New Mexico and some of the other draught, you know, or dry states that the conditions were ripe for invasive species here in Nebraska. So you know, that's how it starts. And is that...was that research very, you know, focused on a watershed in New Mexico and does it really apply here and can, you know, what is transferable and what's not. And so that's where you get from this broad question to very specific, you know, do we have the right data? Do we have the right expertise? And do, you know, how do we collaborate on this research question to actually get the kind of answers we're looking for. And so it's a real...it's just a process of looking at the questions. [LR314]

SENATOR HAAR: Okay. Thanks. [LR314]

SENATOR LANGEMEIER: Senator Carlson. [LR314]

SENATOR CARLSON: Thanks again, Senator Langemeier. And Rachael, I want to make comment on the slide that you had that you said was Jim Goeke's, because whenever I have an opportunity to do this I want to. University gathers data, analyses it, puts it in the form of some information, synthesizes it, turns it into more refined knowledge maybe, and releases that as information, and maybe there should be two

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forms in which this information is released. One would be scientific and the second form would be in a manner, and if we're talking about...I don't care if it's agriculture or anything else, but the end user that's going to apply this research needs to have it presented in an easily understood manner in such a way that, particularly, in agriculture, focuses on, maybe, profit per acre instead of production or...but in a manner that can catch the attention of those that eventually need to apply it, because if they don't apply it, of what good is it? So I just encourage that. [LR314]

RACHAEL HERPEL: And I realize I forgot to mention that as far as the university, we do have that partnership or the advisory panel that...the water resources advisory panel, that we really rely on our partners to help, you know, keep our eye on that ball and really the outcomes. Because there is so much of what we know, it's just getting it out and on the ground. So that's a continuous process. [LR314]

SENATOR LANGEMEIER: Very good. Rachael, I skipped one step and I did it with Dave as well. Can you list off your members of your group? [LR314]

RACHAEL HERPEL: I know there's Dennis Schueth, Tim Anderson, Mike Jess, Scott Richert, Doug Hallum, and myself. [LR314]

SENATOR LANGEMEIER: Ron...Ron Cacek and Dennis... [LR314]

RACHAEL HERPEL: Ron Cacek. Sorry, he wasn't able to be here. [LR314]

SENATOR LANGEMEIER: Dennis, I'm going to butcher your last name, Schueth. [LR314]

RACHAEL HERPEL: Dennis Schueth. Okay. [LR314]

SENATOR LANGEMEIER: I always want to put more to that with all those letters, but

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it's Schueth. Kind of like Langemeier, get's kind of creative. Okay. Seeing no other questions. Want to welcome Senator Christensen joining us. And now we're going to move to Group 2 which is existing funding sources and Lee Orton. And, Lee, your group...are you doing this all by yourself or are you going to do a group? [LR314]

LEE ORTON: I'm going to do this by myself. But I'll tell you who the rest of the members are in just a moment, if you will, Senator. I have to drag some things out of my files here first. [LR314]

SENATOR LANGEMEIER: Okay. Ready when you are. [LR314]

LEE ORTON: Yeah, you don't get to do a PowerPoint with me, you're going to have to watch me instead of the screen and I apologize for that. [LR314]

SENATOR LANGEMEIER: Won't hold that against you. [LR314]

LEE ORTON: (Exhibits 2 and 3) Thank you. And I'll try not to knock it off the table while I'm up here. I have some things to hand out, if you would, since I'm not using a PowerPoint. I've got another one here yet. Thank you. Good morning, senators. I appreciate having an opportunity to visit with you a little bit this morning. I am the coordinator for the work group looking at existing funding resources. The other members of our group are Mike Allen, Mark Brohman, Marian Langan, Karen O'Connor, Butch Koehlmoos, Jasper Fanning, Loran Schmit, and Bob Bettger. And Nanette Hesse in Senator Carlson's office has assisted us in our work activities. I want to say thank you to all of those people for contributing some of the things that we'll be talking about here this morning. Our work group kind of concluded early on in our first meetings of the activity that we would review funding authorities and options of the several local government units, the state and the federal government, in trying to assess where we are right now with what kinds of things we can do. And the very first question on the challenge that was given to us to begin with was how do each of the water-user groups

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pay for the water used? I need to say first of all that water itself is not the resource that we're selling here in Nebraska. When we pay money out for water it is, in fact, paying for the infrastructure that we developed to make use of that supply whether it's to have accessibility to that water for fish, wildlife, and recreation purposes, or whether it is to repel the supply like in flood control, or to deliver the supply like in rural water systems or irrigation projects and the like. The costs that are charged back to people for that are, in fact, for the infrastructure that is used, not for the water itself. And I think we need to keep that in mind, particularly, Senator Carlson, you mentioned it's a public-owned product. Obviously, water in both ground and surface water belongs to the people of the state of Nebraska. Now, how do we make those payments and how do those things actually occur? Generally speaking we're talking about taxes, obviously, that pay these things. Property taxes at the local level, to a great extent, are the sources that are utilized. And the things that I've handed out to you there will kind of give you a summary of all of the various kinds of statutory authorities that exist now with regard to water supply at the local level; to some extent with things at the state level; and federal programs that are available as well, so that you can see the kinds of areas where financing is coming from now. And I say taxes are one of those. At the state level, for the most part, it's the revenue stream of the state which is sales and income tax that's generated that goes back into water facility costs and investments of that nature. And at the federal level we're talking about, generally, the kinds of taxes that the United States collects which is, of course, income tax and all kinds of other things that apply to the general revenue of the United States. Now there are user fees or assessments also charged for water supply in the state. For example, irrigation projects, typically, pay for fees and assessments for the supply that they have that's repayment obligations that they make to whoever invested the money to build the projects and for operation maintenance and so forth. And those are typically not general taxes and they're not handled the same way as general taxes. They are fees and assessments. There are also utility revenues that are charged to cover these kinds of costs. And I'm talking about water service for domestic purposes, waste water handling, and power generation. Those are all user-fee, user-utility revenue streams. We have facility entry

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fees like parking entry fees and things like that that help to pay for water supply activities and access to those supplies. And we have now the new and improved occupation tax we just adopted in Nebraska and which the Supreme Court said is a legitimate endeavor. So occupation tax is being used in that case, obviously. And probably that has been done in some other instances, as well, in the past. And then I can't leave off, there is extensive private investment in water, extensive, probably too far to even manage the count because the majority of irrigation activity in the state, much of it groundwater based, obviously, relies upon private investment to make that system work. And even in the case of surface irrigation projects, the owners of those water rights and the lands pay money that they invest on their own to take care of that water once it gets to their turnout. So they've invested money as well that needs to be taken into account. And there are other revenue sources that are also utilized in the state for limited opportunity activities and one of those is a very important one and that is the Nebraska Environmental Trust. Those dollars generated from lottery revenues are dedicated to environmental project activities in the state for the most part. And that's an important contribution as well to this process. And then there are also lots of private organizations that contribute dollars to the process. For example the Audubon Society, Nature Conservancy, Nebraska Groundwater Foundation, the Ducks Unlimited, and other organizations like that spend literally hundreds of thousands of dollars of private membership dollars and other fund sources of theirs to be able to invest in water and water interests activities in the state. And we can't lose sight of that. And I said earlier that private capital, obviously, that goes into domestic investments in irrigation activities and so forth probably can't be counted. I want to talk a little bit about history, if you will, this morning. What we're looking at here and what we've looked at is not a new subject. We've been through this process a number of times before. I have just chosen to go back to things that I remember historically at this point in time to give you some idea of what we're talking about. But in 1969 there was a study done in the state of Nebraska called the Trelease Report. Probably not very many copies of it around any more. It was principally designed to look at agency reorganization activities in the state with resource-related state agencies. But it did make a mention of the fact that there was a

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need for funding clear back in 1969. Now interestingly enough, nothing was ever done with that study. I don't think any of it was implemented. But in December in 1972, as a part of the state water planning process, there was a document here that was created called "Funding Nebraska Future Natural Resources Development." And I think this publication was the result of what was ultimately created in their water resources development fund here in Nebraska. But there were a number of recommendations in this document that dealt with the amounts of money that should be put into that program and some changes in statutes and constitutional restrictions and limitations that were proposed in there that were never dealt with. So there are a lot of things that could have been done that were recommended back in 1972 that didn't happen. But, nevertheless, there was a recognition of a funding need there as well. And then we have this document which was originally created by the Nebraska Association of Resources Districts which is a funding...a special study on funding of water resources activities. And this 56-page document was produced, as I said, in 1982 and published again in 1983 and circulated very widely around the state. The people who were involved in that process included NRD officials from across Nebraska, state legislators, the investment banking leaders, engineers, legal scholars, state administrative leaders, and other private citizens. And they made a number of recommendations, but they also looked at background authorities. And the one spreadsheet that you've got in there actually shows the cover of that document and then contains two pages of specific statutory authorities that existed then, and for the most part still exist today, that gave local government entities the authority to be able to do the things they need to with regard to water resources development activity. Now, the last, but not least, LB962 when it was adopted came from the Governor's Water Policy Task Force and when that report was submitted to the Legislature and the legislation was adopted, they made note of the fact that there were no funding recommendations made there, but that it was critical to look at funding as a part of the whole package. And that has not happened yet at this point in time. So, at any rate, the existing funding resources workgroup task then had probably somewhat different from the standpoint that we're looking at the existing authorities rather than all of the possibilities of the kinds of things that we may need to talk about with regard to

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what we do with those authorities when we get there. It's something, I think, that's very important to keep in mind when you're looking at the materials I handed out and when you're looking at all of the other information you get from the other groups that water for human consumption, domestic water needs, is typically adequately and satisfactorily fundable in the state of Nebraska. The authorities that exist at the local level give the political subdivisions that are responsible for that kind of work the statutory authorities they need to be able to accomplish those tasks. Now sometimes those decisions are difficult because they are momentous investments of dollars which costs a lot of money for small communities. And there are federal funds and sometimes some state funds that are made available to help that process. But generally speaking, if it's a domestic water need, obviously people need water so those kinds of things are fundable and have been given authority over the years to be able to accomplish those without having to come back to the Legislature to get changes made. That's not necessarily true with many of the other kinds of things we talk about when we talk about water project investment. The kinds of things that are more economic or aesthetic or environmentally driven, projects of that nature are typically much more difficult to fund. And natural resources districts, since their inception, have always had a struggle trying to find a way to pay for those kinds of things. The State Development Fund that was adopted in Nebraska, and some other funding programs at the state level, have been of some assistance in that regard, and to a great extent federal government programs have been beneficial in that area, but the authority given to NRDs and like organizations at the local level have been severely restricted from that standpoint. I remember historically when NRDs first came into existence. There was not the confidence and the leadership of those districts to give them what the Legislature deemed to have broad-based funding capabilities. They were severely restricted back then. Not only couldn't they do very many things with the dollars they had access to through their tax levying authority, but they were restricted in the kinds of things they could spend their money on. I think the Legislature deemed at that point that they knew better what was to be done at that level than the NRDs did. And that's been a struggle since 1969 and 1970 when those districts were created to give them more adequate funding capabilities. The last ten or

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so years with the concerns about integrated water management planning activity and so forth, have seem some new additions and some changes and some additional authorizations given to the NRDs in that regard. But the limitations on the kind of thing we talk about when it's talking about economic, aesthetic or environmental projects is still significantly restricted if you compare it with other areas. Now I'm not suggesting that's wrong. But that's just the reality of the situation at this point in time. Domestic needs for human consumption are adequately funded probably. But many things in other areas are not. And I think we need to keep that process in mind throughout this whole thing. I think, maybe, there I'm going to quit at this point in time and ask if there are any questions or if you want to talk about those handouts to any extent and we'll see where that goes. Thank you for your attention. [LR314]

SENATOR LANGEMEIER: Very good. Are there any questions? Senator Haar. [LR314]

SENATOR HAAR: Yes. We seem to study things and then we put the study on the shelf, then we study it again and again and again. Do you see any solution to that, I mean, what...instead of reinventing the studies again and again? [LR314]

LEE ORTON: Sure. Make a decision and more forward, that's simple enough. But that's a tough choice to make. And I understand that dilemma that you have and that all of the other political decisionmakers and in policy-decision making responsibilities and roles have. It sounds simple, it's not, obviously. Part of the concern I have seen over the years is that far too frequently decisionmakers, in positions like you, or in the positions of a natural resources district director, somehow or other conclude that we can study and gather research and data enough to get to the answer, and we can't. We can give you all of the data that's available, all of the kinds of things that Rachael just talked about, and yet there is still a policy or a political decision that has to be made when you get to that stage. You're confronted with it every day in the Legislature, obviously. And that's true with water just like it is in any other area. We need to make a choice that we want to invest in water in the state of Nebraska if we're going to do those kinds of

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things. And then we need to go about finding the mechanism to pay for that. And whether that be adding to the general tax source, adding a dedicated revenue stream, looking to other places to get special kinds of taxes. I don't know what the answer to that is, but that's something you're not going to get a research choice for. You're going to have to make that political decision, that's just...that's where it's at. We have studied these things and we study them and we study them and because it's a tough choice to make, we don't make that choice and we move on to the next stage and ten years later we study it again. And here we are. We've done this four or five times and probably more than that, if I actually looked more in-depth. And the recommendations that were made in that '83 study that I mentioned to you and that you have the spreadsheets on, you'll get a chance to look at those later in this process. We're not at recommendation stage yet. But there were recommendations made in that '83 study that if you implement them today they would do what needs to be done. And we've done little to none of it so far. Too much answer for the short question. [LR314]

SENATOR HAAR: No, no, no, I appreciate that. And not only don't we solve the current problems, but we're not forward looking. I mean, it would be nice if we could actually get ahead of the curve on some of these. Do you think...do you see any areas where we need to be not just solving current issues, but trying to get ahead of the curve? [LR314]

LEE ORTON: Sure, lots of them. You know, and we watched all sorts of floodwater pass down through the Missouri River system and down through the Platte River system in Nebraska; wouldn't it have been great if we had had places to store some of that water so we could use it when we were short? And we've had opportunities to do that over the years, and we've chosen not to do that for whatever reason. But the state's policy position needs to be expressed more strongly. The state needs to find ways to invest in that implementation of that policy position. They need to assist the local units of government, cities, counties, rural water districts, natural resources districts, and the like, in making sure that they fulfill those activities. And there are all kinds of opportunities to do that. The reports that you are going to get here today will show you

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lots of projects that are there as potentials. Not all of them, probably, should ever be built, but some of them should be and we ought to be prepared to do that. And we aren't right now. [LR314]

SENATOR HAAR: Quite a challenge. Thank you. [LR314]

LEE ORTON: A tremendous challenge and one we probably will do some things for because of what you're doing here now, but ten years from now I would venture we'll probably be back studying it again because we will still not have done enough. Water is the life blood of this state. And you hear all sorts of people tell you that it is the issue of the decade, that it's the timely issue that needs to be addressed now, but we don't do it. And we need to. [LR314]

SENATOR LANGEMEIER: Senator Dubas. [LR314]

SENATOR DUBAS: Thank you, Senator Langemeier. Thank you, Lee. I'm going to kind of pick up on the same train of thought that Senator Haar has expressed here. Is there any way, with hindsight, looking at the recommendations that were made in the past and that for whatever reasons weren't implemented, that we can document with any degree of certainty how, if we would have done something like those recommendations, what we would have prevented as far as hardships where we're at today or is that too hypothetical? [LR314]

LEE ORTON: Might be hypothetical in some cases, but I bet you can find some places where we could show those kinds of benefits forgone. There have been projects on the shelves at the state level because of the old state water planning process and there have been projects on the shelves of natural resources districts for almost as long as they have existed. Many of which have not been able to be brought to fruition because there's just not adequate funding and adequate commitment to do those things. I would venture to guess that if you look at those studies and look at the kinds of things that

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have occurred because they weren't there, you'd be able to identify the benefits that were foregone, flood control activity, economic development opportunities, all kinds of thing in that regard. I don't know that you could do it with all of them, but you could do it with enough to demonstrate that we've missed some opportunities that maybe we can't go back and pick up again. [LR314]

SENATOR DUBAS: All right. And I think that's especially important, you know, right now we're looking at the draught and the devastation to our farmers and ranchers and communities along the eastern part of the state. And I know we have the ultimate responsibility of making that decision, but we have to be able to convince our constituents why we're doing what we're doing. [LR314]

LEE ORTON: Yes. [LR314]

SENATOR DUBAS: And I think with that kind of information, if you could go to someone who has just lost a thousand acres of farm ground and don't know if they'll get it back and saying, you know, this is probably going to cost us, but we could do something to at least not prevent it, but to alleviate it or minimize the damage or what have you. So I think it's important that...I think we haven't...in my experience has shown that we haven't focused enough on what we haven't done and by not doing something, we are creating more problems for ourselves. [LR314]

LEE ORTON: Yes, absolutely, absolutely. You know, there are two or three good examples of places where we found a way to do what needed to be done as a result of damages that occurred because of flooding in the last couple of years. A couple of projects in the Loup River Basin, obviously, the Middle Loup and the North Loup projects had to rebuild their diversion works. And that cost millions of dollars for fairly small projects to get those projects back fully operational again. That was assisted in by the federal government, but it was the local people having guts enough to put up the money that made that rehabilitation process work. There's a good example, obviously,

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of the kinds of things that maybe shouldn't have been forgone as long as they were. Part of the reason why those structures went out was because they were not able to be operated and maintained to the extent they, perhaps, should have been before the flood. Another good example is the Red Willow Dam. That's just been refurbished or in the process of refurbishing down in the Republican River Basin. That project is going to have about a \$16 million price tag on it to put it back into work. And the federal government, the Bureau of Reclamation, is paying that cost up front and then the water users are going to be required to pay that back over the period of time. And because of the unique authorities that are given to the Federal Bureau of Reclamation, they can push that debt back out to the end of the current contract so that the irrigation district only starts paying on that debt about 30 years from now when the other debts that they already owe are paid for. If you were going to a bank to do that kind of thing, that would never have worked. So there's some creative financing capabilities that we should be looking at to try to save some of these problems as well. [LR314]

SENATOR DUBAS: Very good. Well, I really appreciate the historical perspective you put on your presentation. [LR314]

LEE ORTON: Thank you. [LR314]

SENATOR LANGEMEIER: Senator Carlson. [LR314]

SENATOR CARLSON: Thank you, Senator Langemeier. I want to follow up a little bit, you know, on Senator Haar's first question. And I appreciate the comments that he frequently makes that he's been behind the vegetation removal projects that we've had on the Republican and the Platte. And I think back in 2007 when that...my first year in the Legislature and that bill came forth, I'm grateful for the body that decided it was worth a chance. And so we got that passed and we had some money at that time. So I think it was a good idea, but had that good idea come about two years later, we'd still have nothing done. We didn't have the money. [LR314]

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LEE ORTON: And we'd be in a world of hurt too, because the channels wouldn't have carried the water that they carried because of that clearing project. [LR314]

SENATOR CARLSON: Well, and part of his question was the degree that the University of Nebraska was involved in that. Well sometimes you've got to, I think, make a decision on faith this is the right thing to do, let's take the risk and do it. And I'm just thankful it worked out. Now if it hadn't worked out, we wouldn't be doing anything today because the state money ran out after two years and the NRCS and the Environmental Trust wouldn't have stepped in and continued to fund the project. I'm convinced that it saves water. I know that it increased the carrying capacity of the stream and in both the Platte and the Republican this year, if that hadn't been done, we'd had a lot more damage to deal with. [LR314]

LEE ORTON: Absolutely. [LR314]

SENATOR CARLSON: Now, I want to ask you a question in a hypothetical case because you talk about private investment that's made, surface water for example, and you give credit to the individual farmers that make investment in order to make this work. Well you and I have quarters that are side by side and you're in a position financially and we're both getting water delivered to us, surface water, that you put in for efficiency purposes a low-pressure pivot and that's the way you're taking your surface water. I'm still paying for my quarter and I don't have the money to put a low-pressure pivot on my quarter so I can be efficient. Am I entitled to any help, theoretically? [LR314]

LEE ORTON: Theoretically sure. I think you're entitled to some help if, in fact, you can justify it as conservation to save the water supply to make it more efficiently used. How much assistance? I don't know. That's going to have to be a policy decision, I suspect. But we're all benefitted by making better use of the supply. And if somebody needs some assistance to get to that stage, maybe there's some sense in that. Now, you've

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got lending the credit of the state to a private individual is a constitutional limitation. So you may not be able to do those kinds of things even if you want to. But there may be some benefit had by doing it. [LR314]

SENATOR CARLSON: Conceptually am I entitled to a loan that I repay or a grant that I don't repay? [LR314]

LEE ORTON: Maybe both, I don't know. Once again... [LR314]

SENATOR CARLSON: I'm testing you. [LR314]

LEE ORTON: ...depends on how important that policy decision is. You know, if you try to implement the things that are benefit to everybody and you do that by whatever means is most logical and realistic and it could include a combination or one or the other of those, or probably a wide range of other activities as well, to be able to accomplish it, Senator. [LR314]

SENATOR CARLSON: Well I'm grateful in Nebraska we proceed on a basis that we don't spend money we don't have even though it would be nice if we had money to help somebody out. [LR314]

LEE ORTON: Yeah. [LR314]

SENATOR CARLSON: But I think because I'm not in a position you are, the best I can hope for is a loan so that I can be efficient, but I should be required, I think, to pay that off over time. I think that's the right approach. [LR314]

LEE ORTON: And there are low-interest loan capabilities that are available to do some of those kinds of things and that's probably a good investment. [LR314]

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SENATOR CARLSON: And that's why those things are available, there's a good purpose for them. [LR314]

LEE ORTON: Exactly. Yeah. [LR314]

SENATOR CARLSON: Thank you. [LR314]

LEE ORTON: Um-hum. [LR314]

SENATOR LANGEMEIER: Lee, I'm going to ask one. In your...we made a lot of good comments, but in...many have been addressed here, but the one you talked about is we're going to see a list of projects that are out there on the blocks that have been out there...or books, excuse me, that have been out there for a long time. You made the comment some should be done, some shouldn't. [LR314]

LEE ORTON: Um-hum. Not every project makes the kind of sense another one does. [LR314]

SENATOR LANGEMEIER: How...how...yeah, how do we filter through those? I think that's...well let me finish. I think that's been a hurdle to getting water funding is, is they look at some of those projects and some don't believe in them, some do. [LR314]

LEE ORTON: Sure. [LR314]

SENATOR LANGEMEIER: And that's where the angst starts. [LR314]

LEE ORTON: There have already been priority proceedings, obviously, utilized with the limited funding we've had in the past. The Resource Development Fund has had to pick and choose among the projects that have been forward. A lot of them don't even come forward anymore because there's no funding there for a long, long time into the future.

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You need to adopt some sort of a review policy, obviously, and whether that be at the state level or at the NRD level and probably, in some cases both, to decide which projects are the ones that ought to move forward. Not all of them can be built, not all of them should be. And I think you can find those out by investigating the costs and the benefit analyses and the public support that you have in a community for them as part of that decision making. So, and once again, that's not an easy thing. You don't just go out and do everything. Number one you can't afford to; and number two you may not get the best bang for the buck by doing that. So somebody has to make that policy choice. Somebody has to make that policy choice and to some extent that will get done at the local NRD level if you're talking about a project that they're responsible for. In some cases that might end up needing to be a policy choice that's made by some entity at the state level that is responsible for reviewing, deciding what kind of state funding is going to go into a project. [LR314]

SENATOR LANGEMEIER: Okay. Very good. Seeing no other questions. Lee, thank you very much for your presentation. [LR314]

LEE ORTON: Thank you. [LR314]

SENATOR LANGEMEIER: At this time we're going to take a five minute break, let you wander around a minute and then we'll get going in five minutes with Group 3. [LR314]

BREAK

SENATOR LANGEMEIER: If I can get your attention, I think we'll get started. I appreciate coming back here so we can get started again. However, I do appreciate the visiting that's going on. I think that's probably the most productive part of this whole thing is all the different groups getting that opportunity to communicate with each other. Again we're going to move on to Group 3. Jay Rempe was the coordinator and Dean Edson is going to come up and help a little bit. And I want to thank Dean as well

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because he's been active in just about every group as helping to be a resource and that's been appreciated. So with that we will move on to Group 3. [LR314]

JAY REMPE: (Exhibit 4) Okay. Thank you, Senator Langemeier and members of the committee. This is Group 3. Our charge was to look at current use and associated costs. And to start off with, down button, here we go, just here's a listing of everybody that participated in our group. We've met three times including the first meeting that we had here in Lincoln. And I think pretty much everybody at one point or another has participated in discussion in the group. And I want to give special thanks to Joselyn Luedtke from Senator Dubas' office; she's been very helpful in helping facilitate our group's discussions and gathering information and putting together this PowerPoint. So we certainly appreciate her efforts. Dean and I are going to kind of tag team here. We had a variety of different questions and one of the areas of questions related to NRDs and integrated management so we thought it would be just...Dean is an expert on that, so I'll let him (inaudible) on that when we get there. The first few slides are going to be a little...just a bit repetitive and I'll try to...I'll skim through those very quickly. One of the things that our group was supposed to look at is current water needs and look at all the various users and try to assess our current water needs. We had a discussion about how do you define water needs? How do you try to define...what is a need? And we ultimately resolved it as a need...I guess a proxy for need would be the current uses that are in place. One of the discussions that we had, and maybe something to ask the committee for a little more guidance, and it already came up a little bit ago, I think in Dave Sand's presentation, but when you look at needs and withdrawals of water and consumptive use. How do we try to mesh those two together, because ultimately you'll see here thermoelectric shows up quite a bit as a freshwater withdrawal. And you'll see it in this as well. These are information from USGS. It shows up pretty high on surface water withdrawals. But 94, I think it's higher than that, 96 percent or 98 percent of that water ends up back...it's not a consumptive use; it is used and then replaced back into the system. So how do we define that in terms of need? So we're trying to gather some of this information and we'll provide it to you in our report. But if you have any thoughts

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on how we work through defining needs, we'd sure appreciate that. One of the questions that we had to look at is how do the needs differ looking at basins across the state; and do basins...does location have a difference in terms of needs? And you can see by this, we pulled out a few select counties, Colfax County, Deuel County, Nance and Douglas. And, yes, to no one's surprise, depending upon the location, depends on the surface water and groundwater and, obviously, that's related directly to the resources that's available. But also the types of use, as you can see, Douglas County uses quite a bit more on both the public water supply than the typical rest of the state on thermoelectric. So, it varies, again, according to basin. Same, I think you saw this map earlier, it's just a little different presentation. But again, it gets to this how differs...or how needs differ across the basins. This is a precipitation map. Dave Sands had that on his. From an agriculture standpoint, obviously, further west you get because the less precipitation, the crop water needs, irrigation requirements, stays, roughly, the same across the state so you need to make up that water difference somehow so the need is different. One of the things when you're trying to find needs, obviously, and it didn't show up in those USGS maps, but the conservation, and again, Dave Sands had this map of threatened or endangered species in the Central Platte. Just as an example, this is just for an example, but in some of the difficulties to finding needs, the Fish and Wildlife Service estimates shortages to target flows in the critical reach of the Platte River Basin at 417,000 acre feet a year. A lot of people dispute that number and don't agree with it. Don't know if it's quite that high. The Platte River Program says that in the first increment we're going to try to reduce those shortages by 130,000 and 150,000 acre feet by 2019. So how do you go about defining a need and where do you throw that in? I'll skip over power. Drinking water, again, I think you've seen some of this information before, but obviously that's a need out there. And I've got to compliment Joselyn, she threw my hometown in there, Humbolt. I don't know if she did that on purpose, but I like that, Joselyn, thanks. Unmet needs, talk a little bit again about that and how we go about assessing that. Obviously, there are some unmet needs out there and we're not...we're throwing up examples, obviously, you can include ag, recreation, water quality, municipalities, and fish and wildlife service, again you go back looking at,

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maybe, fish and wildlife needs as a Central Platte and the shortages to target flows. How much of that is unmet? For agriculture, anytime you can't fully irrigate or provide the water a crop needs is it an unmet need? And so in agriculture anytime you have moratoriums in place on developing wells, potentially somebody wants to develop, is that an unmet need? Allocations, is that an unmet need? Recreation, we continually hear there's more demand for recreation facilities in the state, so we're trying to gather some of that information and try to bring that before the committee. Some of that may be more qualitative and more discussion in nature than actual figures. At this point I'll turn it over to Dean to talk a little bit about the NRDs. Do you just want me to just... [LR314]

DEAN EDSON: Yeah, you hit the keys. And for the transcribers purposes, this is Dean Edson speaking. I'm going to talk a little bit about the natural resources districts and integrated management plans. This map that is showing up here right now is your fully and overappropriated areas, kind of in the red and crosshatched red. Then you have your (LB)483 districts in the different lighter blue and crosshatched gray colors. It pretty well matches up with what you had in previous slides where it looked at about two-thirds of the state or better has certified irrigated...has all their acres certified for irrigation purposes. Go ahead, Jay. [LR314]

JAY REMPE: Oops, we're missing... [LR314]

DEAN EDSON: You missed one? [LR314]

JAY REMPE: I don't think we have the latest one on here. [LR314]

_____ : I don't think this is the latest presentation. [LR314]

JAY REMPE: Yeah, okay. [LR314]

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DEAN EDSON: Okay. Got the old presentation. Okay. [LR314]

JAY REMPE: Do you want to talk a little... [LR314]

DEAN EDSON: Yeah, on this slide here, this is from the department...I'm not really...hadn't really studied this slide a whole lot, but in key point here is all the projects that they're working on in the Republican River Compact and integrated water management planning, Platte River Recovery, North Platte Decree, Niobrara issues, and other compacts. The bottom line here is in 2010 they spent...DNR spent \$5.2 million on integrated management plans in the state. [LR314]

JAY REMPE: Let me back up a little bit. We're missing a couple of slides. We were working on this into the evening. There was a slide in there talking a little about both the Republican River, NRDs, and some of the efforts that they had done in the...to integrated management. Then also, overall the NRDs and a lot of things that the NRDs in terms have done in integrated management, obviously there's integrated management planning; the plans themselves, the development and the implementation of that, the projects and studies related to that, the (LB)483 rules, and in some states the voluntary IMPs and I don't know, Dean, if you want to elaborate on that a little more. [LR314]

DEAN EDSON: Yeah. I apologize for the slide not being up there. But one of the things...and this also goes to Group 6, we kind of blended things together in looking at IMPs and what's the cost and based an appropriation status for IMPs. Eighteen of the 23 districts has either developed an IMP or have a limited growth plan under LB483. There's five NRDs that have fully or overappropriated IMPs. Three Republican Basin NRDs are fully appropriated for the entire district. They're on their third revision of their IMP. Two NRDs have a portion of their district declared fully appropriated and have developed their IMPs. Ten NRDs have limited growth plans under (LB)483. Two NRDs are currently developing a voluntary IMP authorized under LB764 which was passed in

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2010. And then we have six NRDs that have discussed or are considering voluntary IMPs authorized under LB764. Those districts would primarily be in the (LB)483 area. Skip over that. One key point here was a question about how much the districts have spent on an IMP. I'm going to qualify this that they've spent over \$13 million to develop their plans, adopt and implement, either an IMP or (LB)483. This is going to be kind of an underestimate because the districts, when we surveyed them, they didn't answer the question exactly the same. It's a problem when you ask 23 people a question, you might get a different answer from various different groups. But not all of the NRDs included all of their cost for programs under their IMP, and some did. But, so \$13 million is kind of a conservative number. Also, it doesn't include the cost to develop a voluntary IMP, because we've got two districts that are currently in that process now. So they don't have all their cost numbers developed yet, so. Okay, I'll turn it back to Jay. [LR314]

JAY REMPE: Yeah, we'll move on and talk a little bit about projects and this will build on the discussion you had just a bit ago with Lee Orton. One of the things that our committee was to look at is try to get a handle on all the projects that are out there; those that were slated to begin, but have not and why not; and have these projects been...why were they stopped and what are the costs associated with this? This a little more...or topic it's a little bit more difficult to tackle than what we first thought at first blush. And we do have quit a bit, the committee has quit a bit of questions out there, or reaching out for...trying to grab all this information and we're slowly gathering it in. We do...one of the things that...we tried to include municipalities and some of their costs and some of their projects that are involved. And you, obviously, you have the sewer project up at Omaha; we have an estimate on that and what it would cost, plus its bond service. Dean can elaborate a little bit on some of the NRDs and their projects that are involved that are in the queue. We're also aware of irrigation districts that have a lot of projects going on in terms of trying to become more efficient in both their costs and their management of water, of burying pipe, improving their systems, automating their systems. We're trying to get a handle on that. We approached DNR and asked about projects that are going on there as well. What I guess a couple of things we have for the

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committee is kind of the discussion that took place a little bit ago is how far back do you go and what kind of projects are we looking for (inaudible)? And you have individuals that will approach the NRDs or other agencies wanting to do projects, but in the big scheme of things it's not...it might benefit that one individual, but maybe not the greater good and so it doesn't get funded. Well, should we include that in our list or not? And so it's those kind of questions and Dean can elaborate a little more on the NRDs. [LR314]

DEAN EDSON: Yeah, the slide up here needs to be updated a little bit. That's where it says the NRDs have \$87 million in projects. That total should be \$180 million: \$51 million from the state, \$89 million from the NRD, and \$42 million from other sources. On the projects that got rejected, and when Group 6 comes up I'll go over this in a little bit more detail. But projects that got rejected, we tallied up \$53 million in projects that were rejected over the past couple of years. And those were due to a variety reasons, including, but not limited to lack of funding; didn't meet the cost-benefit analysis; or lack of support. Also, what we didn't include in here and this kind of gets to the question, the dilemma that Jay mentioned is that do we list every request that ever came to us? The \$53 million does not. And I'll give you a couple of examples. We had an individual come to the Central Platte NRD who wanted a flood control structure put on his place and a drainway. He was the only beneficiary. That was \$25,000. He didn't get the cost share because it didn't meet any cost-benefit analysis. Those type of things are included. But you'll have a lot of those type of requests. So when we asked the NRDs this question, they just kind of scratched their head, it was like every time somebody comes in the door you want us to tally up that number and I don't think you want to go that route. I think you want...if you're going to try to track these projects that don't get funded, for whatever reason, they need to be somewhere in a queue or somewhere in a process and not have those that just get rejected right up front. The \$53 million number does not include those smaller-type projects. [LR314]

JAY REMPE: One other area, when we were looking projects that...a little more easily, we can pinpoint a little more easily, I guess, is the Environmental Trust Fund and some

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of the projects that they've turned down over the last two years related to water that they turned down because of the lack of funding. So, that can give you a little more example of some of the projects that are out there that have not been funded, these are more on the research and study side, but some examples there. One of the other things we were to look into was how does flooding, and we included drought as well just because we thought we needed to look at both extremes, affect the state and the costs there. We, again, that's an area we're reaching out trying to get some more information. We understand that...we reached out to the League of Municipalities. I'm going to try to get some information on, particularly, in the Missouri River and some of the flooding that occurred this year and get some costs there. We're also...I understand there is a study underway to look at what the costs are to farmers along the Missouri River on the Nebraska side in terms of lost income. We're trying to get that as well. And then there's a lot of work being done on the recreation side. I understand there's concerns with the flooding and the invasive species like Asian carp and some of those things that could have some impact. So we'll try to provide some of that data in our report to the committee. The other thing, the last kind of area we were to look at was compliance and litigation costs. We'll start over with litigation costs and I think this may have been a bit of an eye opener to some of us committee members, anyway, when you start looking at some of the litigation costs. We kind of broke it up into three broad areas. I think the litigation that first comes to mind when you think litigation around water in Nebraska is the interstate issues that Nebraska v. Wyoming, the Kansas v. Nebraska, those kind of cases. So that's involved there. But you also have quite a bit of litigation revolving around local entities and state agencies. You have NRDs litigating against DNR; you have irrigation districts filing suits against NRDs; you have also some local agencies filing suit against federal government sometimes over endangered species issues. There's some legal costs involved in some of the...with Game and Parks and some of the endangered species issues at the state level as well. So those are all involved. And then you have the individuals that are filing litigation against the NRDs for regulatory action or against the state, and those kinds of things. So, we're trying to gather all that information. And we'll see what we have on the next...yeah, let's back up a little bit. We

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reach out to the Attorney General's Office. Our understanding is they're involved in a lot of this litigation at least involving the state agencies and stuff that they have two full-time equivalents on staff of attorneys that handle primarily water issues. And they also have a specific appropriation for Republican River issues right now because we're picking that. If you go back in years, they had one for Nebraska v. Wyoming and some of the others as well there too. So we're trying to gather all that information from all those various entities and we'll provide that to the committee. On compliance, there's a couple slides missing here; I want to apologize for that, but... [LR314]

SENATOR LANGEMEIER: Jay, just for your knowledge, we do have them. [LR314]

JAY REMPE: Oh, you do? Okay. [LR314]

SENATOR LANGEMEIER: We have them in paper form. [LR314]

JAY REMPE: Okay. Well, good. [LR314]

SENATOR LANGEMEIER: So if you want to keep going through them even though. [LR314]

JAY REMPE: Okay. You'll see there then is a listing of all compacts that Nebraska is involved with, for those in the audience I'll read them real quick. It's the Blue River Compact with Kansas; the Upper Niobrara River Compact with Wyoming and the United States; obviously, there's the Republican River Compact with Kansas, Colorado, United States; we're involved with Platte River Recovery and Implementation Program; North Platte Decree with Wyoming; and then the South Platte Compact with Colorado. And then the next slide shows...we don't have details, but it's kind of all the various parties or entities that are involved that absorb costs dealing with compliance with these various compacts. The two that, obviously, that are among...that come to the top in terms of costs are the Republican River Compact and its settlement, and the Platte River

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Program. The state has costs involved the NRDs and this is where it gets a little difficult because Dean mentioned the costs of integrated management. One of the benefits of the integrated management planning that the NRDs do, it helps us in compliance with these compacts. So you have a little bit of double counting there if you apply that cost to the cost of compliance and integrated management as well. Irrigation districts (inaudible) in the Platte for example, the environmental count in McConaughy, Central, and NPPD provide, that's a cost to them; land purchased, the irrigation...NPPD has purchased land along the Platte River, that's a cost. Water users absorb cost through the regulatory, regulatory cutbacks, the loss of income, economic development becomes a little more costly because they have to go out and find water and in some cases pay people not to use their water so you can allow the new use to continue. So, all those are costs related around compliance and then those other extra (inaudible) in terms of local economies and tax base and we're trying to gather some of that information. What you have before you is a list that was put together by the Legislative Fiscal Office. It is a summary of the costs since 1999 involving Nebraska...the state of Nebraska, this is just the state, related to the issues with Kansas and the Republican Compact. And you can see that the dollars that were appropriated out of the General Fund, the Environmental Trust Fund contribution, the Water Resources Cash Fund, and the others, the way this gets a little bit difficult again is, and Senator Carlson's riparian management program. Yes, that is an expense related to Kansas v. Nebraska, or some of the issues there. But, obviously, there's a lot more benefits out of that than just compact compliance. So I hesitated a bit to share this just because of that reason; there's a lot of various benefits from this, but it gives you an idea of some of the costs involved. This is over a ten year period. Let me...couple more slides that we...one of the questions we have to deal with and I apologize again, it's not on here, but are the costs of noncompliance that if we don't comply with these compacts and we're looking at that as well, the last slide you have there is just an example from the Platte River Program, and there are others in the audience that could elaborate this a lot more than I could, but if the Platte River Program, if we're not in compliance or we don't live up to our agreements, I would say is probably the better terminology, if we don't live up to our

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agreements there, then the Endangered Species Act still needs to be met, those requirements, and it would be done on a project by project individual basis. So, you'd have Central, and then NPPD working on their relicensing with Lake McConaughy and trying to work with Fish and Wildlife Service. And just an example, before we had the program, if my memory serves me correctly, back in the '80s and '90s when they were working through their relicensing process, the cost of upwards of \$30 million. And so it's those kind of costs we're looking at. You have the North Platte projects out in the Panhandle that, again, would have to go through this consultation process with Fish and Wildlife Service; roads projects, anything that deals...has an access with the federal government that involves water would have to go through this process. So, we'll...if we can't have estimates of that, we'll have some analysis or some qualitative analysis of it. So, I think with that we...that ends our presentation and we'd be happy to answer any questions. [LR314]

SENATOR LANGEMEIER: Are there any questions? Senator Haar. [LR314]

SENATOR HAAR: The costs you talked about were mainly a use cost of using water. What about...although the Omaha thing was up there as well, what about the cost of protecting our water and keeping our water usable? [LR314]

JAY REMPE: Uh. [LR314]

SENATOR HAAR: Talk a little bit about those costs to agriculture, etcetera, etcetera. [LR314]

JAY REMPE: That's a good question. And I guess it's something the group hadn't really talked about in terms of, other than I think all the cost...ultimately, that's the goal of, I think, everything that we've been trying to do in terms of our management planning and our projects and all that is to protect and...protect this water source for the future. I don't know if that really answers your question or, Dean, do you... [LR314]

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DEAN EDSON: Yeah, I might just add a little bit to that. When you really get into a water quality issue. [LR314]

JAY REMPE: Oh, okay, I'm sorry. [LR314]

SENATOR HAAR: Yeah, yeah. [LR314]

DEAN EDSON: If that's where you're headed with water quality issue. That was one of the things that we had noticed early on with the focus with this that this was more water quantity issue and we really didn't incorporate a lot of the water quality programs that we have. If that's a direction you want to go, it wouldn't be too difficult for us to gather, you know, some costs associated with water quality programs statewide from both DEQ and the NRDs. [LR314]

SENATOR HAAR: And I don't know where that fits in the whole study, but, I mean, I think that's really an important piece of all of this. [LR314]

DEAN EDSON: Yeah. But in this effort we noticed that that wasn't there and therefore we... [LR314]

SENATOR HAAR: Okay. [LR314]

DEAN EDSON: ...we tried to just focus on the quantity side. [LR314]

SENATOR HAAR: Gotcha. [LR314]

SENATOR LANGEMEIER: As all of the groups have said, they've looked for some more direction before they give us some final results. And I added that to my list that you'll get in your direction. [LR314]

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DEAN EDSON: Okay. [LR314]

SENATOR LANGEMEIER: Whether it's the NRDs participating in phase 2, groundwater for nitrate levels. [LR314]

DEAN EDSON: Right. [LR314]

SENATOR LANGEMEIER: I mean, we have a lot of NRDs dealing with quality issues; at least especially at the east end of the state. [LR314]

DEAN EDSON: Yes. We have a lot of a lot of programs underway and some very successful programs on water quality. But again, we've not included them in this. [LR314]

SENATOR HAAR: Okay, thank you. [LR314]

SENATOR LANGEMEIER: As well as buffer strips along the rivers and...I mean. [LR314]

DEAN EDSON: Yeah. [LR314]

SENATOR LANGEMEIER: I could go on and on. Senator Carlson. [LR314]

SENATOR CARLSON: Thank you, Senator Langemeier. And thanks for the information you've gone through this morning on that one that included expenses related to Kansas v. Nebraska, and 19 percent of that \$47 million figure is the \$9 million loan. And of course the big decision that was made by the Supreme Court that the occupation tax is constitutional, that money will be paid back. Be nice in the next session if we could make a request, maybe, that that money go into the Revolving Fund that could be used

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for other projects on a loan basis and repaid back and have continue use of...do you agree with that possibility? [LR314]

JAY REMPE: Well, I know that's something that this committee has considered in the passed and, certainly, something worth looking into. And I should point out on that chart, a lot of those dollars that were expended on the state side were matched with local dollars or other dollars to achieve the goal that they were trying to achieve at that time. So, it is a little bit misleading in that sense when you look at those figures. But that...and that loan, I think, is a good example of the state and local NRDs partnering together to try to resolve an issue and figuring out a way to do it. [LR314]

SENATOR CARLSON: And I think it doesn't hurt to remind everybody that the purpose of that loan was to repay farmers that had given up their water in 2007 for irrigation. And all of a sudden we didn't have any money to repay them. And so I'm glad the Legislature made a good decision. We would have thought this could have been repaid prior to this, but now the way is clear and that will be done and I think it would be nice if that money were then in a position where it could be used over and over again in other loans for other projects. Thanks. [LR314]

SENATOR LANGEMEIER: Seeing no other questions, thank you very much, well done. Now we'll move on to Group 4, future water needs and costs. Tom, do I have a PowerPoint for him? And I take responsibility for flubbing up these PowerPoint because my computer...I was the only one that messed with it. (Inaudible background conversation) When you're ready. [LR314]

TOM KNUTSON: (Exhibit 5) Good morning, Mr. Chairman and members of the committee. Thank you very much for the opportunity to work on this fine effort. And I'm Tom Knutson, coordinator. On our committee is David Kracman, Terry Julesgard, Dan Smith, Dale Wahlgren, Brian Barels, who is up here with me, Mike Thompson, pardon me, Lash Chaffin, and Duane Hovorka. We've also had assistance with Rochelle Mallett

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from Senator Fischer's office, who has been very, very good to help with us. Our topic is future water needs and costs. And the first question was: what is the future time frame for which Nebraska needs to financially prepare? In our estimate, as we looked at it, we thought short-term should be two to five years. We thought long-term should be anything over five years. The next question was: how do we project what is going to be needed? Every sector evaluates needs differently. For example, municipalities estimate future growth in regulator needs. Public power uses information provided by the USGS and the generation needs 20 years from now. Almost all sectors consider growth, past use, and regulatory impacts. This information leads us to believe that representatives from the different stakeholders need to be at the table when determining the state's future needs. What are the future needs/obligations of the following: agriculture, commercial/industry, municipalities, public power, recreation, conservation, rural Nebraska, urban Nebraska? I guess that gets us to this chart. And "c" and "d" sort of go together: what are the costs associated with meeting those obligations? I'm not sure what I... [LR314]

SENATOR LANGEMEIER: Hit the little arrow button down. [LR314]

TOM KNUTSON: There, thank you very much. What we did was, Mr. Chairman, we got a hold of everybody on the list and asked them to give us their best estimates. And as you can see, municipalities for long term they feel they need water for clean water, waste water, which goes back to your question in regard to water quality. Irrigation districts, our survey came back, short-term needs \$10 million to \$25 million, long-term needs \$75 million to \$200 million. And we must remember that in all these projects we're not advocating any of them from the standpoint of different ones, we're just basically here at the table to say that this is a summary of what we've seen. The natural resource districts' needs--short term, existing projects \$51 million, new projects \$92.5 million, long-term special projects \$8.4 million. Game and Parks came to the table and gave us some numbers of \$3 million for short term, long term \$12 million. Nebraska Wildlife Federation provided a number of \$5 million for a 200-acre lake that they wanted

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to work on. I'm also involved with the state water commission, appointed to the state...
[LR314]

SENATOR LANGEMEIER: Stop you, that lake isn't at Ashland is it? (Laughter) [LR314]

TOM KNUTSON: I can't answer that. [LR314]

SENATOR LANGEMEIER: Okay, that's in my district now. [LR314]

TOM KNUTSON: I can't answer that, Mr. Chairman. Sorry. [LR314]

SENATOR LANGEMEIER: Okay. Sorry about that. [LR314]

TOM KNUTSON: I'm also on the state commission in regard to water, excuse me, financial needs for state projects. And I know that our last meeting, which was just recently, we're in need of about \$24.5 million. Now I want to at least jump in and say that a part of that is probably also involved under the natural resource district short-term needs. I can't actually identify the dollar amount, but my guess is that a part of it is there. In regard to other questions, let's move down to what are the costs associated with storm water issues in the eastern part of the state? The number that I was given this morning is approximately \$1.7 billion, with a "b", for sewer separation. Then what are the costs associated with EPA standards and mandates? I was in touch with DEQ and they tell me that they follow the EPA standards and mandates and if they don't they'll lose their federal funding. So from the standpoint of the projects themselves when they're working on them, the cost really depend upon the specific projects. There's no way to identify how much it is for each project. What are the issues and costs associated with the Endangered Species Act? I have a young man that I think will probably answer that in a bit. His name is Duane Hovorka. And I'm going to move forward and finish my questions, then I'll have Duane come up and also you can ask questions of my other two committee members. What are the consequences, financial

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or otherwise, of failing to meet these obligations, referring to EPA and Endangered Species, etcetera? Several potential consequences, including losing federal licenses, the federal government could reopen and impose additional obligations, potential fines, bearing from thousands to millions of dollars; incomplete projects. What are the mechanisms that are in place to ensure these needs will be met? Agency or governmental regulatory actions, individual lawsuits, agency rules and regulations, a reliable source of funding to make sure all the needs are met. Are there special rural, urban, geographical issues with which we should be concerned? Short answer, yes, absolutely. Examples, Omaha sewer separation project, Missouri River plan, Republican River Compact, Platte River Recovery Program. And the last question, to what compacts or agreements is the state obligated to act? What are the requirements and the time frames for compliance? You want to hit that one. Those are the existing compacts and agreements: Blue Basin, Upper Niobrara, Republican River, Platte River Recovery, and Republican River lawsuit settlement. I would like Duane to step up for a minute and give his answer to the one question that I kind of skipped over, the Endangered Species Act. And then I'd also like to get Lash up here to talk about the numbers that you seen earlier on municipalities which were quite large. And so if I could, I'd just yield to Duane for a second. [LR314]

SENATOR LANGEMEIER: Yeah, that's fine. That's the great part of being kind of informal here. Welcome. [LR314]

DUANE HOVORKA: Well thanks for calling me young. (Laughter) Duane Hovorka with Nebraska Wildlife Federation. And Brian Barels has actually captured some of this in a memo he did. There's...depending on how broadly you look at environment endangered species there's a lot. But really there's three big ticket water resource things in the state right now. One is the Platte River Recovery Program that you've heard about and there the issue is we're trying to restore some of the historic flows for that river. And so that's the 130,000 to 150,000 acre feet. Most of that...it's on an annual basis, most of that's going to come by retiming existing flows. Some of it may come from some water

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conservation or leasing or buying out existing users. That's still in the works. So we don't know what the split will be there. The price tag on that is about \$96 million. All of that is being paid by the federal government, the state of Wyoming, and Colorado water users through the program. So none of that is a Nebraska state obligation for that \$96 million. The time line on that is about...the end of the first increment, which is about 2020. On top of that water plan, Nebraska agreed when it signed the agreement in 1997 that we would protect existing flows in the Central Platte with respect to the target flows that were established for fish and wildlife. And because we allowed substantial water development after that 1997 agreement, we're now in the position of trying to offset those developments that occurred since '97. And so that's what...that's the Nebraska depletions plan, part of that program. I have seen a recent....and maybe Brian has, a recent estimate from the DNR about how many acre feet we need to offset. But the cost ranges are anywhere from \$40 million to \$150 million. And that's part of what we're trying to address last year with LB229 was to secure some funds for that funding base in order to do that. So that's the first, you know, and most...I guess most obvious, endangered species situation. The second is on the Lower Platte River. And there the issue is not to restore flows, the issue is try to protect existing flows in order to protect the endanger species in the river. So it's not a question of spending new money there, it's a question of if there are other uses, other needs for some of that water that may have to be accomplished by finding some offset to those flows. And so, again, that's not cash out the door to do an endangered species thing, but it may be as that water is proposed to be developed there may be costs associated with offsetting those existing flows. And the third area with respect to endangered species is on the Missouri River. And there may need to be changes...certainly have been discussed, proposed changes to the Corps of Engineers management plans for those reservoirs upstream including Gavins Point Dam in order to address some endangered species issues on the Missouri River. I think it's safe to say that it's too early in the process to see whether that management plan is going to get changed, how it might get changed, or what impacts it might have. But it could impact some of the existing water uses on the Missouri River along Nebraska and that could include recreation. It also could include power plants,

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municipalities, and others that now take water out of the river. And I think we don't know whether the changes in the Corps of Engineers management plan would impact, or how they might impact those existing uses. But that's the other kind of big ticket endangered species issue that's out there that's being dealt with. Did I miss anything big? [LR314]

BRIAN BARELS: Those are the major rivers. [LR314]

DUANE HOVORKA: Okay. If there's questions about those, I can try to fake my way through them. [LR314]

SENATOR LANGEMEIER: Any questions at this point? Senator Carlson. [LR314]

SENATOR CARLSON: Yeah, thank you, Senator Langemeier. One of the things you said, and a lot of people say this, I'm probably...have done it too, but, we talk about that some of these costs will be covered by federal dollars and some by...so there's not additional obligation to the state of Nebraska. That's true, but any federal dollars involves the people of Nebraska are paying that bill. [LR314]

DUANE HOVORKA: Sure. [LR314]

SENATOR CARLSON: And I'm so sensitive to that because my wife and I were in Europe three weeks this summer and they talk about stuff being free and it's not free. They're just so used to entitlements and socialism that they forget it's their tax money that pays for these things. And it's like the government is funding it free. Well, it's not free anywhere. So I'm especially sensitive to that. I'm not getting at you, but that's the kind of statements we make and we all pay for that stuff. [LR314]

DUANE HOVORKA: True. Federal taxpayers are paying for that. [LR314]

SENATOR CARLSON: And we just have to make sure it's a good expenditure. [LR314]

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DUANE HOVORKA: Right. [LR314]

SENATOR CARLSON: Thanks. [LR314]

SENATOR LANGEMEIER: Any other questions? Don't see any. We'll let you go for now. [LR314]

DUANE HOVORKA: Thanks. [LR314]

TOM KNUTSON: If I could, I'd like to have Lash make some comments. [LR314]

SENATOR LANGEMEIER: You bet. We appreciate it. [LR314]

LASH CHAFFIN: I think Senator Carlson's question leads well into what I was going to say. Our committee had a long discussion with respect to future needs. It's hard to ignore, sometimes, the obvious funding source for those future needs. And with respect to the municipal...the \$700-plus million, the \$400 million that were shown earlier, in all likelihood those will be rate-based expenditures, that as several other committees have suggested, there are statutes allowing rate-based collection mechanisms for water and sewer. And those numbers are extremely, accurately, quantified. The state of Nebraska, through the Department of Environmental Quality and Health and Human Services, does extremely detailed annual surveys of municipal water and sewer infrastructure needs. That didn't exist ten years ago, but that survey is...get down to the point you could say Axtell needs \$300,000 for iron and manganese removal. I mean it's highly detailed. Now there's a second set of municipal needs that are not so easily tied to a funding source such as the \$1.7-plus million of the combined sewer, sanitary, storm water separation project in Omaha. And then also, as far as future needs go, there are needs that we may never be able to quantify as far as municipal needs. Every infrastructure project now has some water component to it. Anybody who might also be

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on the Transportation Committee is familiar with how difficult it has become to build a federal aid highway project, in part because every project now goes through some sort of environmental analysis and ultimately some sort of water analysis. Cities and states are involved in wetlands banking through highways. Every project, to a certain extent, involves water now. And these costs are, probably, never going to get quantified in this type of study, but as we go through, I think it's worth noting that water policy has found its way into many, many areas and I hate to guess what the costs...we're working on that now, but involved in the flooding are...anybody that saw the pictures of the highway, Interstate 680, it was just...it looks like some sort of bomb went off and I think we're going to see that for miles and miles. And it occurred to me as I was sitting out there, sorry, Tom, I didn't bring this up earlier, but the dewatering in Nebraska that's going to take place over the next years...few years is going to be awfully costly as well. So, any questions? [LR314]

SENATOR LANGEMEIER: Very good. Are there any questions at this point? Seeing none. Brian, do you... [LR314]

BRIAN BARELS: I didn't have a presentation; I was here to help Tom in case there were any questions that came up. The only point I would make is, as Tom noted, one of our assignments is what are the future water needs? And different groups use different planning, as Tom said. We've taken a look at future power needs in the state of Nebraska by taking a look at the projections for the next 20 years by the Nebraska Power Association. And then you take the existing water uses as reported by USGS, as Tom mentioned, and it will give you some idea of what water needs for the future for the power industry in Nebraska will be and we'll be putting those kind of numbers together and hopefully we can get additional information for other industries and other needs in the future too. [LR314]

SENATOR LANGEMEIER: Very good. Are there any questions? Senator Haar. [LR314]

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SENATOR HAAR: Yeah, well of course we live in a state where mandates a four letter word. But when it gets to water policy, it's very complex because to manage we have lots of rules, lots of rules. Do you feel that Nebraskans understand that or is there still a lot of push back that we ought to just get rid of these rules? [LR314]

TOM KNUTSON: From my perspective, Senator, I would probably go back to my experience with irrigation districts, reclamation districts, and even the NRD, I got elected to the board last year. I don't know that they fully understand the rules and regulations. And I'm quite sure at the irrigation district level they don't. And what I'm referring to there is, it's not just the state rules and regulations, but it's the federal rules and regulations. And then we put our own rules and regulations on top of that just to basically operate. So I'd say no they don't. [LR314]

SENATOR HAAR: Still an education process, yeah. [LR314]

TOM KNUTSON: Yeah, definitely it is, because, basically, you have new board members elected that come in and they got to be educated to catch up and it takes awhile. [LR314]

SENATOR HAAR: Okay, good. [LR314]

SENATOR LANGEMEIER: Other questions? Seeing none, thank you very much. Well done. [LR314]

TOM KNUTSON: Thank you. [LR314]

SENATOR LANGEMEIER: That was Group 4. Now we'll move to our final group which is Group 6 which is DNR and NRDs. Kent Miller is the coordinator. And you don't have a PowerPoint, right? [LR314]

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KENT MILLER: No PowerPoint, just a handout. Well, the pressure's off, we don't have to worry about knocking your laptop off now. [LR314]

SENATOR LANGEMEIER: That's why I moved it. Go ahead. [LR314]

KENT MILLER: (Exhibit 6) Smart. I'm Kent Miller. I'm manager of the Twin Platte Natural Resource District and coordinator for Group 6 which was DNR and NRDs. The members of Group 6, besides myself, was Dennis Strauch, he's general manager of Pathfinder Irrigation District; Lyndon Vogt, manager of the Upper Niobrara White Natural Resources District; Glenn Johnson, manager of Lower Platte South NRD; Curt Friesen, farmer/Nebraska Corn Board; Larry Moore, farmer/Upper Big Blue NRD, board of directors; Steve Gaul from the Nebraska Department of Resources; and our staff assistant was Lisa Johns from Senator Smith's office. We wanted to thank you, Senator Langemeier, for beginning this process. I know there was a lot of different opinions back in July when this started, but our observation has been this is a good process and we're putting together some good information that needed to be done. We were joking with the surveys that we had to...all the NRDs had to fill out, we were telling Dean yesterday if he would have sent out that request a couple of years ago, we would have told him forget it. But it's information that needs to be done and needs to move forward. So thank you and thank you for the committee for being here today. For Group 6 we, basically, did four surveys. Surveys were created and compiled by Dean Edson, by Lyndon Vogt, by Glenn Johnson, and by Dennis Strauch. What we want to do today is we want to share with you some of the highlights from each of those surveys as they relate to each of the questions assigned to our group. The surveys have become pretty voluminous, but they will be part of the final report. The plan is for...we passed around to you what our presentation is, but the plan is Dean will cover the first two questions. I will cover questions "c" through "g". And then Dean will conclude with question "h", the last question. So, Dean, if you want to start. [LR314]

DEAN EDSON: Thank you, Kent. And for the transcriber's record, this is Dean Edson

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speaking. Before I start, I also want to give special thanks to Lisa Johns with Senator Smith. She helped us out in compiling...help us compile the data and get the reports put in a condensed form, so thank you to your staff person for helping us. First of all, for each...the question was, for each NRD's budget, funding mechanisms, levy authority, levy use, we're just finalizing the budgets now for the districts. And this is what I have for their adopted budgets. They won't be finalized, probably, for another month once all the evaluations get adjusted. But these will be pretty close. The NRD's budgeted total disbursements, there's \$249 million. Of that disbursement, property tax requests are \$60 million. So about a fourth of the expenditures from the districts are coming from property tax. The average levy is 3.73 cents. And then I'm breaking down that property tax levy for you. Your general levy authority is 4.5 cents. That raises \$48.8 million. That average levy is 3.04. The groundwater's 1 cent levy that's authorized, that raises \$4 million; the average is .35 cents and 17 districts are utilizing that. And I want to make special note here that some of the districts don't use that 1 cent; they include all their groundwater programs in their general levy authority. So, and don't try to look at that and say only 17 districts are doing groundwater management. They just chose not to use that 1 cent levy. On the fully and overappropriated 3 cent levy, there's \$6 million that is raised there, average 2.62 cents and there's five districts using that 3 cent levy. On bonded indebtedness there's a 1 cent levy maximum on that. And that's within their 4.5 cent levy authority. Papio-Missouri River is the only one that's doing that. They're raising \$1.1 million from bonded indebtedness and they're using .2 of a cent. On the occupation tax, this year we're at \$10.6 million on occupation tax. And that's only being raised right now in the Republican River Basin, the Upper, Middle, and Lower Republican NRDs are using that. And that's averaging \$9.5 per certified irrigated acre on 1.1 million acres. I want to point out the key thing here with this is that in...as we mentioned it previously with the IMPs, those three districts are in their third revision of their integrated management plans. And those have included in them water short-year plans. And so these districts are gearing up to take care of projects to address those water-short years. On NRDs projects, we were asked to provide a list of water projects and their sources revenue. We've included in these projects water banking, water

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purchases, leases, water conservation programs, cost-share programs, some development fund projects, water studies, and other related water quantity programs. Again, this does not include the quality programs that we discussed with the previous group. And I'd also urge some caution in trying to add these numbers to another group's report because some of the expenditures included in this may be included in someone else's report. For existing projects over the next five years, we have a total of \$180 million; \$51 million from the state; \$89 million from the NRDs; and \$42 million from other sources. For new projects over the next five years, that tally is \$275 million; \$92.5 million from the state; from the NRD, \$104.6 million; and \$77 million from other sources. We also asked to look at special projects for urban, rural, ag, municipal, public power, recreation and others. There are a total of \$32.3 million; \$2.4 million from the state; \$6 million from the NRDs; and \$24 million from other sources. Projects over the next five to ten years looking out, we got \$22 million on the slate; from the state sources \$6 million; from the NRDs \$16 million. And we also had the question about projects not funded, and I mentioned this earlier, there was \$53 million in projects rejected over the past couple of years. And those could be for a variety of reasons like didn't meet cost benefit, lack of funding, or lack of support. And again, I'd note that that doesn't include all the projects as some of the smaller ones aren't included in that. On the second question on "b", are the same tools/practices used in rural and urban NRDs and what's the difference in costs? The answer to that is no. There's significant differences in tax base, resource management, program needs, etcetera. For example, flood control and recreation projects are demanded more in eastern Nebraska where there's more rainfall and where it's also near population centers. There's less demand for irrigation. By contrast in central and western Nebraska, there's higher demands for irrigation, less demand for flood control and recreation. When we look at that and compare it to their tax base, I'll give you a couple of examples to take it kind of to the extreme. The Papio-Missouri River NRD in eastern Nebraska, the Omaha area, one penny will raise about \$5.2 million. A penny levy in the entire Republican River Basin, that's three NRDs, will raise \$625,000. So there's significant difference in valuation. On the other hand, if you look at the dollar an acre tax in irrigated land in the Republican River Basin, that

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raises \$1.1 million. If you applied it at the Papio, it will raise \$59,000. And so those are two extremes that I wanted to point out to you. Turn it back to Kent for the... [LR314]

KENT MILLER: For the next few questions. And in regard to the occupation tax, that Dean referred to, and I specifically recalling our conversation that you and I had, Senator Langemeier, a few months ago and that I do anticipate, and particularly now with the Supreme Court ruling, that you'll see the NRDs and the Platte Basin including the occupation tax ability to use that go into our IMPs. Because at some point we're going to need to look at revisions and those are our rules and regulations. So just wanted to reiterate that that I foresee that that will be happening in other NRDs and especially in the Platte Basin. In regard to the next four questions, Lyndon Vogt, and I wanted to express my appreciation for him for doing the survey he did, has turned into a very voluminous survey. There were 144 studies reported by the natural resource districts and this took many iterations to get this accomplished. But there was a perception out there, I believe, that there are duplicate studies, duplicate efforts going on. And so then I think going through the next four questions, it will point out that that is not happening. The first question is: when do the NRDs and DNR conduct research, data gathering, do analysis on the same topics for the same purposes? What the survey showed that currently 17 of the 23 NRDs have active research and modeling projects in partnership with DNR. Even analysis is being done on the same topics for the same purpose, it is generally done in a partnership and that's what the survey showed. Of the 144 studies that were reported, only 17 of those 144 studies reported were done without any partner. And the...I did not pick up in that...looking into those surveys that those were duplicate of other surveys that were being done. Fifteen of the NRDs reporting, all of the studies that they had occurring were with partners; 15 of the NRDs did not have studies going on that were without partners. The next question: what are the differences in the methods/science used and costs? Cost of studies have become a major factor in seeking multiple partners. I think a very good example of that is the Cohyst Effort in the Platte River Basin. It's been going on for a long time. It needed to be done. Fortunately it...and I go back to, I think, Ron Bishop was the one who started this, had the foresight

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that that needed to be put in place. That couldn't...the cost of that is extreme and there had to be multiple partners to put that together. A number of the current studies would not be financially possible without DNR's involvement. The difference in methods used if DNR was a partner was only mentioned once in the reported studies that are currently underway and the disagreement mentioned was between DNR and the USGS, not with the NRDs. And again, that was only mentioned once. The next question: in what areas do the NRD and DNR partner their resources? If the study is beneficial to both entities, it appears resources are partnered, even sometimes when the resources that are partnered are only in-kind. And secondly, groundwater modeling and integrated management studies are beneficial to both the DNR and NRDs. And again, that's my example, when I referenced the Cohyst Study. And then finally, in this area in regard to this survey, if the study does not directly relate to the responsibilities of both entities, such as water quality, that's when they do not partner and the NRD has its own engineer or can complete the project inhouse and save costs there. And that's, generally, when there were not partners. And those four questions related to that survey and that will be available to you in our final report. The next question, and unfortunately Dennis Strauch could not be here from Pathfinder Irrigation District, but he coordinated a survey dealing with the question what is the role of irrigation districts? What is the role of irrigation districts in this dynamic? You know, that was a major part of the discussions, I think, when LB962 was recommended from the Water Policy Task Force. I think there was a major part of that discussion. In the survey Dennis put together, unfortunately, he had a very limited response. He did not have a lot of response to his survey. But it was very apparent that there was a difference of opinion within the irrigation districts. And primarily it related to, you know, what the state laws say and what specifically does LB962 say. And, basically, and I'm speaking from the NRD perspective on this, is that the regulatory entities, as was described in LB962, is DNR and the NRDs. We believe that irrigation districts facilitate water delivery to the customer the same as groundwater well facilitates water delivery to the customer. But that's a perspective from the NRDs side and that's where I come from. That's all I have on that one. We'll have more information on that as we put our report together since

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Dennis was not able to be here. So, Dean, our final question. [LR314]

DEAN EDSON: The final question is what the cost associated with changes in basin appropriation status. And I gave you part of that report with the previous group, I think it was Group 3, on the 18 of the 23 districts have either developed the IMP or have a limited growth plan under (LB)483. In the essence of time, I'm not going to repeat everything there. You have it printed in front of you now. A couple of highlights, again, the districts spent over \$13 million to develop and adopt and implement IMPs and limited growth programs. I have also listed out...broke those out in categories and listed the districts for you on the fully and overappropriated IMPs. The fully appropriated IMPs, the district...partially fully appropriated IMP, there are two districts there, the (LB)483, the ten districts there and the voluntary IMP being developed and then the voluntary IMP under consideration. [LR314]

KENT MILLER: That is what we have. You're probably glad we're the last of your long morning. But we certainly would be willing to respond to any questions. And specifically if there is additional information that you think we need to be developing in regard to DNR and the NRDs, because that is a very...you know, critical and important relationship in water in Nebraska. And if there is additional information that we can obtain, you know, we would certainly be glad to do that. DNR did put together a lot of different documents that can be related too, I think. Laurie (phonetic) sent those out to many folks, but if there's additional information that we can be gathering that would be helpful to what you want out of this, you know, please tell us now or as we move forward. And I will tell you our group did meet three times and we actually have another meeting scheduled later this month because we anticipated that there would be direction come out of today and into the future and we're ready to continue to move forward. So thank you. [LR314]

SENATOR LANGEMEIER: We will have some direction. Questions? Senator Haar.
[LR314]

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SENATOR HAAR: Two comments, first is for Senator Carlson. I do believe that the richest Americans should be paying a higher percentage, but...(laughter). I'm just amazed the more I've learned about natural resource districts and how it's helped us preserve our water supply in Nebraska. I mean, you look at other states and it's just a train wreck and I didn't know if that's all due to the NRDs, but a large part is and I really appreciate that. [LR314]

KENT MILLER: Thank you. [LR314]

DEAN EDSON: Thank you. [LR314]

SENATOR LANGEMEIER: Senator Carlson. [LR314]

SENATOR CARLSON: Thank you, Senator Langemeier. [LR314]

SENATOR LANGEMEIER: The rebuttal. [LR314]

SENATOR CARLSON: And, Senator Haar, I do believe that everyone in the United States that earns money should pay some tax. And so in terms of tax increases we might agree on that. In the question about what are the differences in the methods/science used and costs; and the costs studies become a major factor. And I think this is pretty important because as NRDs you hesitate to set aside much money for studies. It's hard to do. [LR314]

KENT MILLER: It is. [LR314]

SENATOR CARLSON: The state hesitates to do that. The Department of Natural Resources hesitates to do that. So practically, I think, the costs of studies needs to come from private industry, the majority of it, seed companies, irrigation companies,

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pivot companies, and maybe even some implement companies that deal strongly in areas of strip till and so forth. It's worth their while to, perhaps, have some studies to see that their implement is, in fact, something that brings about more profit. But if private industry funds the research with the University of Nebraska, then the university has the challenge of making sure it's ethical research and the results don't tend toward whoever provided the dollars. But we can deal with that. And I'm sure the university will. But we need to encourage those in private industry to step up to the plate a little bit more. And then the university needs to prove its worth their dollars if they give them dollars to do this research. And then that research needs to be reported in scientific terms to satisfy those people and in practical terms so that the people in agriculture want to use the results. But funding is a problem. And I think that we all need to work together and brainstorm on how we can encourage this from the private sector. [LR314]

KENT MILLER: Senator, I want to point out an example of what you're suggesting there that is actually occurring right now. And I don't know if Roric Paulman is still here or not; he was earlier, but he's a producer south of Sutherland. I think he farms somewhere in the 7,000 to 8,000 acres. He, basically, has turned his entire farming operation into, if you will, a demonstration or a laboratory or an information-generating type of operation and he's partnered with, exactly what you're talking about, and that's private industry. And I won't be able to list them all, but I know he's working with Monsanto; I know he's working with several of the water sensor companies; he's working with John Deere and they have many different entities that he's working with. This whole effort is being funded and coordinated by a local producer with industry. And he had a field day here, out at his farm here, about a month ago. He's committed to continue on into the future and basically is...he was a member of our stakeholders group as we put together our IMP. And he said, private folks, we need to step up and show that we're interested; there are ways to conserve water and there are ways to do things better and industry wants to work with us. And he's showing that and that's in place and that's occurring right now. And I will attempt to get some more information for you on that. [LR314]

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SENATOR CARLSON: Yeah, that's good, that's good. Thank you. [LR314]

DEAN EDSON: Senator, just to add to what Kent said there, we have quite a few districts that are working with the private sector. Some of the manufacturers and seed companies, etcetera, working with the NRD and the university and other partners we've put together so we can show...kind of get a public/private joint venture going on some of these research projects. One of the things you mentioned is...the only thing we're real cautious with is any internal biases. And we got to be real careful with that. And so we go into those with eyes wide open knowing that we want to avoid any impropriety or any jaundice view they might take of a Monsanto joining up with a NRD or a John Deere joining with an NRD for...on research project. We want to make sure we eliminate as many biases as we possibly can. [LR314]

SENATOR CARLSON: That's good, because I think that in the end Innovation Campus and Food, Fuel, and Water, and the research that goes through there, the university lends the credibility that's so necessary and everybody can benefit that way. [LR314]

DEAN EDSON: Yes. [LR314]

SENATOR CARLSON: Good. [LR314]

DEAN EDSON: And we'll continue to pursue those and, like I say, there's numerous that already exist today. [LR314]

SENATOR CARLSON: Good. Thank you. [LR314]

SENATOR LANGEMEIER: Seeing no other questions, thank you very much. Well that's the conclusion, not of the day, but of the reports. And now it begs the question what next? We're going to put all this information on-line. We will be sending out an e-mail,

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whether that's on my Web site as state senator, or on...I don't even know if the Natural Resources Committee has...we'll find a spot for it within the great halls of government here, and so you can review it. As you saw by many of the people giving their preliminary reports here, had some questions and water quality came up as an idea that wasn't addressed in a question. Feel free as a group as if you have things that came to your mind that you want to weigh in, send me an e-mail with that so we can incorporate that in some future instructions to give these groups. As you can see they're very open to making sure we explore all the avenues. And I surely can't be the one to think of all the questions? So we take that feedback very serious. With that we will put that out there. And once we can give some advice back to those committees, we can come up with the final report and we hope to get that done by the end of the year. And then we will start the next stage is...I think we're going to be able to make our case that we need funding for water. And then it will be on to trying to come up with those funding options and what we want to pursue potentially as a group to have long-term funding to these issues. And that's where we're headed here. So we will continue to work on that. And we want to thank everybody's participation. We want to thank the staff, they've been incredible to help these groups. And is there anything else I forgot? With that we'll let you go and, again, thank you very much; we appreciate it greatly. Thanks, it's been great. [LR314]