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Natural Resources Committee
September 16, 2008

[LR330 LR331 LR332]

SENATOR LOUDEN: Well, good morning. I'm Senator LeRoy Louden, represent District 49, Chairman of Natural Resources Committee. And we're here today to have interim hearings on LR330, LR331, and LR332. With that we'll have introduction of the senators that are present here at this time. To my left is Senator Deb Fischer from Valentine; seated at the presentation table is Senator Mark Christensen from Imperial; and on the end here is Senator John Wightman from Lexington. To my right is Mark Ludwig, legal counsel; and next to him is Norm "Cortland"...Norm Wallman from Cortland. (Laugh) How about that? You always got to make one mistake in a day. And Senator Tom Carlson is running around here someplace there. Oh, he's eating. Yeah, we should know he would be at the food, over at the trough. (Laughter) Senator Tom Carlson from Holdrege. Annette Dubas will join us later. She called in and I think she had a flat tire or something like that that slowed her up. And, of course, there's Senator Ray Aguilar that represents Grand Island and this district here. Thank you for being here today, Ray. And on the end is Barb Koehlmoos our committee clerk. Agency people, I don't think we have any agency people over there. And, of course, we want to thank Ron Bishop and the Central Platte NRD for these facilities. And we're very pleased to have the privilege to be able to come to this room and this nice facility and operate here. And give Ron Bishop our best regards. And this afternoon we'll give him some real tough questions when we do his tour. Thank you, Ron, for being here. Okay, now down to business. Those wishing to testify on a resolution should come to the front of the room when that resolution is to be heard. As someone finishes testifying the next person should move immediately to the end of the chair at the table. The green sign-in sheets for testifiers are on the table by the doors and need to be completed by all people wishing to testify. Please complete the form prior to coming up to testify. When you come up to testify put the form in the box. Do not turn in the form before you actually testify. Please print, and it is important to complete the form in its entirety. If our transcribers have questions about your testimony they use this information to contact you. If you do not wish to testify but would like your name entered into the official record as being present at the

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hearing there are white sheets for you to sign by the door. The list will be part of the official record of the hearing. As you begin your testimony state your name and spell it for the record even if it is an easy name. Please keep your testimony concise and try not to repeat what someone else has covered. If there are large numbers of people to testify it may be necessary to place time limits on testimony. If you have handout material give it to staff and it will be circulated to the committee. If you do not choose to testify you may submit comments in writing and have them read into the official record. No vocal display of support or opposition to resolutions will be tolerated. And I would also like to remind you that the purpose of the hearing is to gather information for the benefit of the committee. It is not appropriate to respond to what someone else has testified to, unless a committee member asks for clarification. With that we'll have Senator Christensen give the presentation on LR330 and LR331. Senator Christensen. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you, Chairman Loudon. My name is Mark Christensen, M-a-r-k C-h-r-i-s-t-e-n-s-e-n. LR330 is a study to identify points of diversion of transferring excess water flows or flood waters, storm waters between basins to help manage capabilities within the state. There is a number of times in different areas of the state that we have surplus flows. I think that if we looked at the state as a whole instead of broken up into so many different river basins or NRDs and things this way, there's ways that we could better utilize the excess water in the state. We have about 2 million acre feet of water flows into the state every year and about 8 million acre feet flows out as well as about 90 million acre feet of rainwater that hits the state every year and are used in various ways. But I think there's places, and I'll specifically hand out a map on Spring Creek, of a creek that would transfer water out of one of the Central Public Power and Irrigation's canal systems into the Republican district that could be used in times of surplus flows, or let's say a big rain hits up in...along E-65 Canal, which Bertrand, Loomis, Smithfield area. And them guys want to shut off, you could dump your tailwater down into the Republican River district and have a benefit with the compact with Kansas where some of this water, once it's into these canal systems, can't be

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diverted back to the Platte and even flow on down that direction. There's areas that it could be better utilized, if I understand it correctly. There's another one called the Perkins County Canal, was never built. It's water taken out of the South Platte that has a 1920-something date that would allow water to be pulled out of the Platte. It's still used in the Platte, but it could also go into the Republican. It originally was to be built that way. Has not been built. The easements are there. It's another way of taking surplus flows in times of excess and being able to use it for ground water recharge, for building up areas for compliance, for helping out the Platte to meet the flows back to 1997 dates. It's areas like this that I hope to learn today out of these studies that will help us as a state better manage our water resource. LR331 we're tying with this one is, can we have a better way of transferring water or getting through the red tape, I might say, getting water into Johnson's Lake in Elwood in times of surplus? I'll go back to what really got me started on this was in 2007 I come through...come home or was heading back to Lincoln on a Sunday night. I got to Grand Island, I stopped at Arby's there and there's water flowing on the east side of Arby's, on the north side of the Holiday Inn Express, coming around along the Interstate, back under the bridge and going on east. And there also had ice jams at Ashland and we were doing physical damage to houses and we were not transferring water into Johnson's Lake or Elwood lake or any other lake above it, which makes no sense. Since then we did finally get to...took about three days to get some water transferred in there that time. Since then it's been much simpler. But my idea here is there a way we can say once flows hit a certain level at Grand Island, which meets endangered species, meets the minimum flows, that we can automatically start kicking water into Johnson Lake or Elwood or "Jeffers" or Sutherland, places that we could utilize the water for another time, whether it be for public power, for the cooling of Gerald Gentleman, whether it be for irrigation and at the same time reduce damage to homeowners and better utilize the state's resource. Thank you.
[LR330 LR331]

SENATOR LOUDEN: Questions for Senator Christensen? I got one or two. [LR330 LR331]

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SENATOR CHRISTENSEN: Okay. [LR330 LR331]

SENATOR LOUDEN: You said there was easements and stuff. And that's a canal from the South Platte River? [LR330 LR331]

SENATOR CHRISTENSEN: It's called the Perkins County Canal. I apologize, I don't have a map on it. But Kent Miller can...I've asked him to come up and testify on this one. He can identify, because he's working with a coalition on how this works, the actual date of it. But it is actually transferring water into...it stays...it's right now still in the Twin Platte or it could even go into the Republican, the original canal would have been built all the way down into, which could have been irrigated out of or could be used for recharge. It would be a benefit to not only the Platte or potentially even the Republican. [LR330 LR331]

SENATOR LOUDEN: Okay. And then one other, when you talk about where they were diverting that water, who has control over that? Is that someone in the state of Nebraska or is that federal people or... [LR330 LR331]

SENATOR CHRISTENSEN: Well, in 2007 I called Ann Bleed and talked to her and got her situation and side of it. And at that point in time I was told we had to go through U.S. Fish and Wildlife and through the Bureau of Reclamation and through a number of steps and processes. And I asked at that time what can we do to streamline this. And never did get an answer, period. And so as we have changed directors, I thought it was time to step up and see if I could get more answers on this. But I can also tell you I'm sure if Tim Anderson come up here he can testify from Central Platte Irrigation District that they're being able to transfer water a whole lot easier now. It is working better at the present time. And seems to work as soon as flows hit a certain level they can transfer water in, just like I envisioned it working. But I'd like to ask him the question, you know, is there something more that we can do to simplify this? Is there further things we need

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to look at as a state that will make sure that we're not sending excess flows down the river when we have areas that we could get beneficial use out of and at the same time not causing damage to homes and things when we could be alleviating that pressure coming down the river. And that's the type of things I'm hoping to learn here. And I know I've talked to Tim and Don Kraus and different ones. And it's working much better right now. [LR330 LR331]

SENATOR LOUDEN: Okay. Thank you. Other questions? Senator Carlson. [LR330 LR331]

SENATOR CARLSON: Senator Louden. Mark, you started out by talking about 2 million acre feet coming into the state and 8 million leaving the state. Now before I've heard the figure 1 million versus 2 million. But I think you also said that doesn't count rainfall? [LR330 LR331]

SENATOR CHRISTENSEN: That's correct. There's about 90 million acre feet of water hits the state of Nebraska every year, which the majority of that is...soaks in the ground for recharge, to grow plants, loss of evapotranspiration. But we also lose a lot of that through pooling in the Sandhills, extra lakes get larger in times of surplus and they shrink in times. We lose a lot of it through evaporation which goes to Iowa to form a rainfall again. Is there a way to better utilize that? [LR330 LR331]

SENATOR CARLSON: Okay. But I just...I want it clarified for me that 2 million coming in, 8 million going out is a lot of water. [LR330 LR331]

SENATOR CHRISTENSEN: Yes. [LR330 LR331]

SENATOR CARLSON: In addition to the rainfall. [LR330 LR331]

SENATOR CHRISTENSEN: Correct. Well, that rainfall, what does happen to run off and

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hit the stream is going to be part of that 8 million leaving. [LR330 LR331]

SENATOR CARLSON: Yeah, I would think so. [LR330 LR331]

SENATOR CHRISTENSEN: But 90 million acre feet hitting the state and 8 million, you know, a lot of that is lost through growing of grass, crops, things this way. But there's still a lot lost through evaporation up through the...off of ponds, lakes things this way that I think is untapped resource that could be better utilized. I know I've asked some people at the university and places before if you take and add soap to a pool of water it breaks the adhesion of the water and it will soak in faster. I've taken two different water holes in a cornfield before, put soap in one and nothing in the other one and lost the corn in the hole with nothing and the water hole with soap made it. It soaked away that much faster. Okay. Is there something we can do in our lakes to reverse that, that's going to make that adhesion tighter so it doesn't evaporate so easy? Be another thing that would benefit the state--something that I think our university and people need to study and look at another way of better utilizing the resource. Even if the...you take the lakes in the Sandhills that soak down a lot but also have evaporation off of them because they can't run to a stream. If that could be kept from evaporating and held there so it can soak in as grass and things use it wouldn't it be a benefit to the state instead of having it evaporate off and leave? I think there's a...at least on the lakes I know for sure it would be a great benefit. But how all...where all could this go if we better utilized that rainfall onto the state? But this study is more on where we can divert to better utilize or maintain the flows, be able to divert out in times of excess. But think there's a lot of things we can do in this state. [LR330 LR331]

SENATOR CARLSON: Thank you. [LR330 LR331]

SENATOR LOUDEN: Okay. Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. Thank you, Senator Christensen.

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When you talk about the 2 million coming in and the 8 million leaving, have you seen any numbers or any maps that show where the majority of that 8 million is produced? I would assume it would be in the eastern part of the state where they have more rainfall. You know, we don't see a lot of water coming in on the Platte. We don't see a lot of water coming in on the Republican. We certainly don't see water coming in on the Niobrara. So I have heard the comment made that the majority of the water is produced in the eastern part of the state. If that is...would you agree with that, first? [LR330 LR331]

SENATOR CHRISTENSEN: Oh yeah, you're going to have more to the east. I've seen the map of every stream, how much comes in all areas. And that's all the way around the whole border of the state. [LR330 LR331]

SENATOR FISCHER: So when we study the possibility of diverting water is it that feasible for the western part of the state? [LR330 LR331]

SENATOR CHRISTENSEN: Okay you'd... [LR330 LR331]

SENATOR FISCHER: Certainly there are times that you experience this spring. [LR330 LR331]

SENATOR CHRISTENSEN: Right. And that's the point I'm making. If it's feasible to transfer when you're above minimum flows, why wouldn't we do that as quickly and simply as we could. That's my whole point in this thing. [LR330 LR331]

SENATOR FISCHER: Okay, thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: Thank you, Senator Louden. You talk about Perkins County

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canal. And as I understand your testimony none of that has ever been constructed. It's just quite a ways, is that correct? [LR330 LR331]

SENATOR CHRISTENSEN: There is a small portion of that was constructed in Colorado but none of it in the state of Nebraska as I understand it. [LR330 LR331]

SENATOR WIGHTMAN: And how long did you say that canal would be? Eighteen miles or... [LR330 LR331]

SENATOR CHRISTENSEN: I didn't say how long it be. [LR330 LR331]

SENATOR WIGHTMAN: Oh, I thought I heard... [LR330 LR331]

SENATOR CHRISTENSEN: That would be a better question for Kent. [LR330 LR331]

SENATOR WIGHTMAN: And no estimate of cost I understand. [LR330 LR331]

SENATOR CHRISTENSEN: No. They're working on or looking at them things now. [LR330 LR331]

SENATOR WIGHTMAN: Now where would that water end up if it didn't go away? Obviously you were talking about some of it staying in the Platte River basin and also some of it being diverted possibly, as I understood it, down to the Republican River basin. Is that correct? [LR330 LR331]

SENATOR CHRISTENSEN: Well, that's possible. Most likely at the present time none of it would get to the Republican to be honest with you. But right now my hope would be that we can pull more water, because of the 1920-some date, out of Colorado because of its earlier date and priority, being surface water's priority system, be able to draw more out of Colorado, which would just give us more water out of the Platte split.

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[LR330 LR331]

SENATOR WIGHTMAN: Do you have any idea as to well, the feasibility of this is going to depend a lot on the cost I assume. [LR330 LR331]

SENATOR CHRISTENSEN: Yes. And I'm sure this is not a cheap deal. But that's what is being looked at now. [LR330 LR331]

SENATOR WIGHTMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Okay. Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. Just a quick question. The lakes you mentioned as possibly receiving any diversions--Johnson Lake and what were some of the other ones? [LR330 LR331]

SENATOR CHRISTENSEN: Elwood. [LR330 LR331]

SENATOR FISCHER: Elwood. Were they full this year? [LR330 LR331]

SENATOR CHRISTENSEN: Elwood was not, Johnson gets full. They fill Johnson and then they fill Elwood out of Johnson's. [LR330 LR331]

SENATOR FISCHER: Okay. [LR330 LR331]

SENATOR CHRISTENSEN: "Jeffers" and there's a bunch of them, Sutherland and a number of them above it. And I don't know if they were all full. I know Lake McConaughy wasn't, I don't know about Sutherland and "Jeffers" and some of them. [LR330 LR331]

SENATOR FISCHER: Okay. [LR330 LR331]

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SENATOR LOUDEN: Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: [LR330 LR331]

SENATOR CHRISTENSEN: Thank you. Senator Christensen, you said it was filled out of Johnson but in fact it's filled out of the same diversion into Johnson... [LR330 LR331]

SENATOR CHRISTENSEN: Right, correct. [LR330 LR331]

SENATOR WIGHTMAN: ...out of the canal and then there's a diversion point before it gets to Johnson, isn't that correct? [LR330 LR331]

SENATOR CHRISTENSEN: Yes, that's correct. [LR330 LR331]

SENATOR WIGHTMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Okay. Well, I guess you're off the spot, Mark. Thank you, Senator Christensen,... [LR330 LR331]

SENATOR CHRISTENSEN: All right. [LR330 LR331]

SENATOR LOUDEN: ...for the opening and your testimony. Next testifier please. [LR330 LR331]

_____: (Inaudible.) [LR330 LR331]

SENATOR LOUDEN: Can you see it, Senator Wightman? [LR330 LR331]

SENATOR WIGHTMAN: No. I can see right down that one... [LR330 LR331]

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SENATOR LOUDEN: Okay. Can you turn it just a little? [LR330 LR331]

SENATOR WIGHTMAN: I could maybe move down. Is there a chair down there by you? [LR330 LR331]

MICHAEL DRAIN: I'll be blocking the audience. [LR330 LR331]

SENATOR WIGHTMAN: That...that's fine, I can see well enough. Thank you. [LR330 LR331]

SENATOR LOUDEN: Go ahead. [LR330 LR331]

MICHAEL DRAIN: (Exhibits 1, 2) Senator Louden, members of the committee, my name is Michael Drain, M-i-c-h-a-e-l D-r-a-i-n. I am testifying today on LR330 and LR331 on behalf of the Central Nebraska Public Power and Irrigation District. So notwithstanding the Senator's suggestions that Tim Anderson could answer all these questions, he passed the buck (laugh) to me. I will try to keep my comments short. I suspect that my greater value might be in being able to answer questions of the committee with regard to our facilities since they are some of the facilities contemplated and being used under these resolutions. In order to achieve what is being discussed--the movement of water from the Platte to the Republican, to enhance Republican flows you really need three things. You need infrastructure, you need authority and you need water. And I will address each of these three things very briefly. With regard to infrastructure the Central Nebraska Public Power and Irrigation District and the Nebraska Public Power District already has existing facilities which have, for decades, been supplementing flows in the Republican basin as an incidental result of the operation of projects. Central in particular is what I will talk about if I can make my laser pointer work here. We store water in Lake McConaughy, on the North Platte River. We release that water for irrigation use either coming down the North Platte River or through, excuse me, NPPD's system right here,

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which is located south of the South Platte River. But in either case the water ends up here at North Platte at our diversion dam. The water is then taken through about 75 miles of canal, that's the red line on the map there. The canal includes about 26 lakes along the way, most of which people have probably never heard of and are fairly small. But some of the more significant ones are Jeffrey Reservoir, here about a little under halfway, and Johnson Lake, which is located here near the end. At the end of that run water can either be put back to the Platte River right here, at what we call the J-2 return, or during the irrigation season it can be run into what you see on this map as these green lines. Those are the irrigation systems of our district. Elwood Reservoir, which has also been mentioned, is located right here south of Johnson Lake. Elwood Reservoir regularly operates as a transfer of storage water from Lake McConaughy down to Elwood Reservoir. It fill by means of the upper part of what we call the E-65 irrigation system. So the water is put into Elwood ahead of it ever reaching Johnson Lake. For those that are not familiar with our system, a point where water is either diverted into the E-65 system and Elwood Reservoir or allowed to go into Johnson Lake. There is a drop of water into Johnson Lake. Once water has gotten into Johnson Lake it cannot be brought back then to be put into Elwood Reservoir. So there is a decision point there. I mentioned that our systems have for decades been already incidentally providing some flows to the Republican River System. That is through the seepage from our irrigation canals, from our supply canal and from deliveries to farmers in that area because the farmers cannot 100 percent effectively capture for consumption the entire delivery of water. Some of the water seeps through the field and recharges the aquifer. And we are located...the south side of our system follows the watershed line between the Platte and Republican and so seepage in our area then either flows back north to the Platte, flows south to the Republican or in...a small part flows east to the Blue River system. The recharge in our area that provides flows to the Republican has been fairly dependable. It is only in the last four years that we have had to reduce our deliveries to that area. And we do know that the recharge to the area and the contributions then to the Republican have been diminished in the last four years, will be again next year with another partial delivery. That is primarily the consequence of the

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drought that has been ongoing. Central contends that it is also to a lesser part the result of ground water development upstream of Lake McConaughy. Certainly the drought is the biggest picture. But that's nothing we have control over as Nebraskans. One of our complaints has been we do have control over ground water management and have managed it in such a way right now as to deny some of the water that would be available for us to eventually bring to this area, including some of the water that goes to the Republican. One of the consequences of the reduced supply has been reduced deliveries. You may have heard that we are doing what we call an allocation or a partial delivery. We shortened the season that we run the irrigation canals. Which means that there are fewer weeks during which water is seeping out of our canals and into the aquifer system. We also reduced the delivery to our irrigators in that area to what we call a half rate, half the normal rate they receive water. The consequence of those two things combined is that they get about one-third of their normal allocation. And then the last thing is that in order to save water, when we do the reduced rate, Central does not require Elwood Reservoir then for the satisfaction of that reduced irrigation demand. And so for the last four years Central has not been putting water as a...we've not been transferring water from Lake McConaughy to Elwood Reservoir, which has significantly declined the reservoir contents at Elwood and reduced seepage from that reservoir. We have, during the last four years, we've been able to take advantage of high flows, as Senator Christensen had discussed. Taken some opportunity to put water into Elwood Reservoir in order to try to, if we can, save the fishery in there and to maintain some amount of water for recharge. The problem with that is we're making use of a water supply that is not the normal appropriation for Elwood Reservoir. And we are making use of a water supply that is much less dependable; it's only there on spot occasions. And it is a water supply that is...while it may appear to people from time to time to be excessive, it's a water supply sometimes actually relied on by others. In order for us to do these operations, we have had to ask and we have received and we're thankful for the agreement by Central Platte Natural Resources District and the Nebraska Game and Parks Commission from time to time to waive temporarily some of their instream flow appropriations so that water can be put in Elwood Reservoir. Without that often

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what appears to be excess flows in the river may not actually be because of other appropriations and other uses. And now with the Platte River program in place there are the Fish and Wildlife Services target flows, which are also flows that are supposed to be protected and not be taken out of the stream under new operations. With regard to authority for the existing uses or the historic uses of bringing the water in and have it incidentally go to the Republican, those authorities have long existed. We have state recognized incidental recharge appropriations. I don't think that we are lacking anything there. As I mentioned, the more recent efforts to take occasional sporadic high flows out of the river and put it into Elwood Reservoir, those are not a part of the regular appropriation for Elwood Reservoir. We are allowed to do that by the Department of Natural Resources, as are other reservoirs when the department determines that there is no cull on the river, that there is no other appropriation that is not being met. That is the reason why we would need to have, for example, or have had to have from time to time the instream flow rights waives, because if they were not those rights would be the cull on the river and then it would not be appropriate for us to store water in Elwood or any other reservoirs. In order to make this a more permanent or more automatic thing to do our district has already applied to the Department of Natural Resources for new appropriations to allow us to take excess flow out of the river and put it into either Elwood Reservoir or our irrigation canals for the express purpose of recharging the aquifer. That operation would improve flows to the Republican as well. The primary purpose is for recharge locally and returns to offsets...provide offsets in the Platte River. But as we know from the historic operation of our system, the Republican basin does receive an incidental benefit from that type of an operation. Our application at the department, I will be honest with you, I cannot recall how long ago it has been now since we made the application. If you're not aware, the Platte is under a moratorium for new appropriations. And so our application is actually a request to the department to waive the moratorium on filing. And once we would receive the waiver we would then submit the actual application. The waiver request itself includes an exact duplicate of the appropriation which would eventually be filed. We are hopeful that we will hear from the department at some time that we would be allowed to go ahead and make that filing.

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This would not be unique for us. Any user in the Platte River in the over-appropriated area would be required at this point to get a waiver from the moratorium for filing before they can make a filing. In addition to infrastructure and authority you have to have water in order for this to work. We are talking now at this point with the Platte being over-appropriated with not necessarily a regular thing but an occasional thing. This needs to be water above and beyond instream flows in most cases. If we cannot get the waivers it would need to be above the target flows. I don't see anything under the Platte program that would grant waivers for those. Fish and Wildlife Services target flows being greater on most occasions than the instream flows that are granted by the state, those will probably then drive what we define as excess flows going into the future. I am certain that to the extent that there are occasional remaining bits of water in the Platte that we may view as excess, these types of uses will not be the only ones seeking to make those uses. I would expect that there may be other reservoirs, other projects that while development is going to be significantly curtailed going into the future, I don't think us as Nebraskans have given up hope of any development at all going forward. The positive thing that I would point to is normally when you get these excess flows they are not typically excess by 100 or 200 CFS, they may be in excess by several hundred to thousands of CFS. And we always do have capacity restrictions. For example, while we would desire to bring water into Elwood Reservoir or down into our irrigation canals here, we are limited by how much water would already be in the supply canal at the time the excess shows up. In addition to that, the canal connection from the supply canal here down to Elwood Reservoir, I believe, has a maximum capacity of about 200 CFS. So it does seem likely that if you're going to be looking at any kind of excesses beyond 200 CFS, we would either need to make some infrastructure changes or there would be opportunities for others to also develop excess water into the future. I've tried to give you a decent summary of how our system currently operates and how it could be used to provide recharge for the Republican. But I'm sure I've not answered all your questions and I'd be glad to take any. [LR330 LR331]

SENATOR LOUDEN: Okay. Questions for Michael? Senator Fischer. [LR330 LR331]

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SENATOR FISCHER: Thank you, Chairman Loudon. You and I are going to have to have lunch sometime so we can go over a lot of this. But just hopefully a quick question. At the end when you were speaking about excess water and earlier you had gone through what I took to be your ability to make diversions on or throughout your system, what time of year do you see excess water? [LR330 LR331]

MICHAEL DRAIN: It's a good question. Typically, we will see it in the spring, fall, and if we have a very high rainfall event we can get it in the summer. We do not typically now see excess, what I would call excess flows during the wintertime. You could see them in terms of excess to target flows. But the problem you have with the wintertime is icing problems. So we may have excess water in the river but we don't necessarily have capacity on the system to move that water around because we have gates and things that need to be moved. And operating a system with rapid changes can be difficult in the winter. [LR330 LR331]

SENATOR FISCHER: What time of year are your canals full? [LR330 LR331]

MICHAEL DRAIN: Our supply canal, the red line, our supply canal flows year-round and... [LR330 LR331]

SENATOR FISCHER: Is it full year-round? [LR330 LR331]

MICHAEL DRAIN: The diversion is not full year-round. We operate, and let me see if I can provide some clarification on that. Our supply canal has gates in it that allow us to set how high the water is regardless of what the flow rate is coming in. So we can have...our normal capacity is a little over 2,000 CFS. We could have the lakes at the same depth in the red canal whether we have 2,000 CFS or 1,000 CFS. [LR330 LR331]

SENATOR FISCHER: In the spring it seemed to me this year in the spring we had a lot

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of rain. And there was flooding. I guess I would think your canals...can you react to that quickly if there is a lot of rain coming in the spring, I mean people aren't irrigating, obviously. I would think there would be some capacity in your canals. Can you react to that quickly and get water to some of these reservoirs so they can begin to fill? [LR330 LR331]

MICHAEL DRAIN: It all depends on the timing and location. Timing and location is everything in water management. And, for example, if we get flooding that is anywhere below...it degenerates below our diversion dam. For example, the flooding in the Cozad area that we had this spring and flooding out in this system, we can't divert that water because it's being generated downstream. The best we can do is try to hold back water where we return it, where perhaps we can start putting it off into irrigation canals. In the springtime it's not at all uncommon for us to already be in the process of filling our canals and be moving water as fast as we can anyway. [LR330 LR331]

SENATOR FISCHER: Moving it where? Where are you moving it? Are you moving it to the reservoirs at this point? [LR330 LR331]

MICHAEL DRAIN: No, well it will depend on the year. Normal operation in the... [LR330 LR331]

SENATOR FISCHER: What did you do this year? [LR330 LR331]

MICHAEL DRAIN: This year we would have been moving water to these green lines, the irrigation systems. So we start filling those systems in the spring. [LR330 LR331]

SENATOR FISCHER: And those are open canals? [LR330 LR331]

MICHAEL DRAIN: Those are open canals, with the exception of we have some segments in pipeline, and this smallest part right here, which is identified as E-67 is

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almost entirely pipeline. But the majority of our system is open canals. Those do not contain water year-round like the supply canal does. And so in the spring we will be what we call moving water from the Platte River down to the irrigation canals, starting to fill them up. [LR330 LR331]

SENATOR FISCHER: Do you have first call on that water? [LR330 LR331]

MICHAEL DRAIN: No. Central is one of the most junior priorities on the river system. We have...the rights that we normally would want to work under are our 1930's appropriations. There are several late 1800s and early 1900s appropriations on the Platte River. [LR330 LR331]

SENATOR FISCHER: And how does our agreement with the feds work into that, if you can move water that early away from the Platte in the spring? [LR330 LR331]

MICHAEL DRAIN: The agreement with the feds being the Platte program? [LR330 LR331]

SENATOR FISCHER: Yes. [LR330 LR331]

MICHAEL DRAIN: The Platte program allows for the continued use of existing uses at the time the program was created. So since we're a pre-1997 operation that is all okay. [LR330 LR331]

SENATOR FISCHER: Okay. Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: What's the current level of Elwood right now compared to the last several years? [LR330 LR331]

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MICHAEL DRAIN: I need to apologize right now to you, Senator, and all of you senators. Though I am an engineer, I am abhorrent in my memorization of numbers. And so what I will tell you is it is terribly low. (Laughter) We have been able to put in somewhere between 6,000 and 12,000 acre feet a year over the last four years under these temporary uses. We will normally put in...normally try to have in the reservoir 20,000 when it's time for use. The reservoir will seep, under regular operations, about 20,000 acre feet a year. That tells you a little bit about how much recharge we've lost to the area under the current short supply. I can tell you the lake has certainly seeped out since we last put in water this year. And the water that we put in this year was 9,000 acre feet. So it's...all I can tell you is it's near dry. [LR330 LR331]

SENATOR WIGHTMAN: And no irrigation has taken place out of there, hasn't been for about four years? [LR330 LR331]

MICHAEL DRAIN: Four years we've not irrigated out of Elwood Reservoir, and we are not going to be irrigating out of Elwood Reservoir next year either. [LR330 LR331]

SENATOR WIGHTMAN: So basically, all of the water that goes in is either leaving by evaporation or by seepage, is that correct? [LR330 LR331]

MICHAEL DRAIN: That's correct. And very little of that will be by evaporation. [LR330 LR331]

SENATOR WIGHTMAN: Okay, almost all of it would be by seepage. Assuming you could take in 200 cubic feet per second, is that what you said? [LR330 LR331]

MICHAEL DRAIN: Yes. [LR330 LR331]

SENATOR WIGHTMAN: The capacity of that diversion canal is? [LR330 LR331]

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MICHAEL DRAIN: Yes. [LR330 LR331]

SENATOR WIGHTMAN: I guess we could have an idea, how long would that take?
How many days to... [LR330 LR331]

MICHAEL DRAIN: We can take that in at 400 acre feet a day, so it's 10 days for 4,000
or, what is that, 50 days for 20,000. [LR330 LR331]

SENATOR WIGHTMAN: And the capacity is about 20,000? [LR330 LR331]

MICHAEL DRAIN: Yes. Yeah, to operate Elwood Reservoir it is a pump storage project.
It's currently, by that we mean the reservoir sits higher than the canal. It fills it, and we
have to use pumps. You know, it's a high cost operation. That is normally the case. The
reservoir has got so low the very bottom part of the reservoir, what we normally call the
dead pool, and usually you don't allow it to go empty, does sit below the elevation of the
canal. So for the last four years the lake has been so low, when we start filling we run
the water backwards without the pumps for a while until we match the elevation, and
then we turn the pumps on to go higher than that. The capacity, as you're filling by
gravity, will not always be that 200 CFS. If you've ever siphoned water in or out of
something or watched water go out of a hole in a bucket, the rate at which it will move
diminishes as you lower that water level. And so when we're trying to refill the bottom
part of that reservoir, if we don't have the pumps turned on yet, it may be the canal can
run 200 CFS, but perhaps the pipes running without the pumps cannot. [LR330 LR331]

SENATOR WIGHTMAN: Is the seepage from Elwood Reservoir all go into the Platte
River basin or does some of that... [LR330 LR331]

MICHAEL DRAIN: No. We estimate that about half of it goes to the Platte and half of it
goes toward the Republican. The...what we call the ground water divide, ground water

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and surface water, may be the same resource, but it doesn't always act in the same way. And in ground water the direction the water flows is from the high point of where the ground water is, not necessarily the high point from where the ground is. And we refer to that as the ground water divide. The ground water divide between the Platte and the Republican in this area basically passes right through Elwood Reservoir. So what that tells us is water...seepage from Elwood Reservoir goes north and flows into, you can't see it on this map, but it's captured by Plum Creek and puts that water back into the Platte or it heads south towards the Republican and the creeks in the Republican. [LR330 LR331]

SENATOR WIGHTMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Carlson. [LR330 LR331]

SENATOR CARLSON: Senator Louden. Mike, the tan area on the map is where Central delivers water to irrigators, correct? [LR330 LR331]

MICHAEL DRAIN: Yes. This area right here. [LR330 LR331]

SENATOR CARLSON: Okay. Now, does Central deliver any water to irrigators in the Republican basin? [LR330 LR331]

MICHAEL DRAIN: I believe we have something along the lines of about 200 acres that are just right along the edge. And I can't even recall the history of those. They may be cases where the delivery...the exact location of the watershed line was not known at the time that deliveries were started or there have been changes because of the way farmers shape their field. You know, the watershed line between the Platte and the Republican is a very big flat area. And so we have just a handful. But that's about 200 acres out of 100,000. [LR330 LR331]

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SENATOR CARLSON: Okay. So it's a very, very small amount. Now, you threw me on the figure you gave right at the start of your testimony. I thought that this year Central delivered about 60,000 acre feet to the irrigators. [LR330 LR331]

MICHAEL DRAIN: I don't know what the quantity of the delivery was. Our allocation was 6.7 inches. What was the figure that I gave you that threw you? [LR330 LR331]

SENATOR CARLSON: Well, you said delivered about a third. And I know that the contract is for 18 inches, correct? [LR330 LR331]

MICHAEL DRAIN: Correct. [LR330 LR331]

SENATOR CARLSON: But I'll put Tim on the spot back there. In a conversation with Tim I took it that there were 60,000 acre feet delivered this year. And on a full year there would be 100,000 acre feet delivered. [LR330 LR331]

MICHAEL DRAIN: I think that we've had...I don't know what...Tim, were you talking about the seepage from the canals? We normally have around 100,000 acre feet of water that is recharged from our canal system. And during these last few years it's been around 60,000 acre feet recharged out of the canal system. That's not the deliveries to the irrigators. [LR330 LR331]

SENATOR CARLSON: Okay. This is just something a little bit difficult to understand there, because if...must be inefficiency because if it takes 60,000 to deliver 6.-some inches this year, and with a little bit over 100,000 you can deliver a full allocation, there is a diminishing efficiency as you go down. [LR330 LR331]

MICHAEL DRAIN: As we deliver less and less water you're correct, there is a diminishing efficiency of the system. [LR330 LR331]

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SENATOR CARLSON: Okay. [LR330 LR331]

MICHAEL DRAIN: And the reason for that is the canals seep based upon how long the canals are, how deep the water is in them and how many days they have water in them. And the amount...and we really can't change that much without lining them. So the more you can deliver...for example, we cut the rate for the same...for each day that the water has...that the canals have water in them right now, we allow the customer to take only half as much water as they normally could. That right there will cut your efficiency. We are saving water, total water in McConaughy. But when you run the math on, you know, losses versus delivery it does get worse. And that's the dire situation that our customers face. [LR330 LR331]

SENATOR CARLSON: Okay, thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wallman. [LR330 LR331]

SENATOR WALLMAN: Thank you, Chairman Louden. Yeah, Mike, thanks for coming. In the Elwood Reservoir area has the ground water, you know, the aquifer, has that depleted a lot in the last five years, six years, seven? [LR330 LR331]

MICHAEL DRAIN: Since you ended the question with the last few years, yes. Ground water level in our area have been declined, not just at Elwood Reservoir but throughout what is marked up here as our irrigated area. However, they are still well above the predevelopment levels. There is a substantial amount of water under our area that is managed by the Tri-Basin NRD. And that is what affects then, that creates the opportunity for the incidental recharge to the Republican. But they are down these last several years. [LR330 LR331]

SENATOR WALLMAN: And that probably increases seepage, too, huh? [LR330 LR331]

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MICHAEL DRAIN: Generally, the seepage is primarily a function of the material of the canal itself. So long as the water, the ground water level is not up in contact with the canal it's not going to change the rate of seepage very much. So... [LR330 LR331]

SENATOR WALLMAN: I just meant the reservoir, not the canals. So... [LR330 LR331]

MICHAEL DRAIN: At the reservoir the ground water...the reservoir is such a dominating factor, the ground water level is determined by the reservoir. [LR330 LR331]

SENATOR WALLMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Christensen. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you, Chairman Louden. Mike, would you check on the acres that's irrigated into the Republican and get back to Senator Carlson and I, because I believe... [LR330 LR331]

MICHAEL DRAIN: Yeah, actually what I'll do is look over my shoulder and ask Tim if he could take a note. So he put me on the spot. I'll do the same to him. We could check that. [LR330 LR331]

SENATOR CHRISTENSEN: Okay, because I believe it's higher than that. So I'd just like to be updated. [LR330 LR331]

MICHAEL DRAIN: And it may be. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you. [LR330 LR331]

MICHAEL DRAIN: I always say I don't know the answer, but it's probably got a seven in it. (Laugh) [LR330 LR331]

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SENATOR LOUDEN: Okay. Questions I have, Michael, I'm kind of intrigued by this seepage. What does Central Power and Irrigation do to alleviate some of this seepage or shut it down or so you don't have quite so much? Do you...I mean, out west we have silt runs and that sort of thing. Do you have anything like that so that you don't have so much seepage? [LR330 LR331]

MICHAEL DRAIN: We have put in a number of conservation improvements. We don't do it, the silt run, because we don't have the silt source like they do up in the Panhandle. We have put in pipeline in a number of our canals. We have put in membrane lining in a number of our canals. Since the 1950s...we do compactions on our canals. And since the 1950s we've reduced our seepage losses by about 25 percent overall. Now, it's a bit of a Catch 22 for the area because the ground water users in the area and the ground water users in the Republican benefit from that seepage. And so, you know, it's something that I think all Nebraskans are struggling with. Whether or not the historic concept of conservation is always the thing you want to do, it would seem to be an odd allocation of resources for us to go in and, for example, spend several hundred thousand dollars to find a way to reduce seepage in our system and cut flows to the Republican and then turn around and have to come and find a way to build a pipeline (laugh) to bring flows back to the Republican and end up with the same net quantity water but having spent a whole lot of money to put in some infrastructure to end in the same place. [LR330 LR331]

SENATOR LOUDEN: Well, we had these hearings out in western Nebraska about return flows you know and efficiency use of water and using circle pivots to more efficiently use surface water irrigation. And that's the reason, yeah, there's the same way out there. The canals, you know seepage to run some of those what they call...Game and Parks call their cold water streams now which were never there until the canal system was put in. And anyway, this is what I'm wondering, you know, somewhere along the line we have to have efficiency. But on the other hand then

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should that be taken into consideration when you guys are taking water from Lake McConaughy you're also recharging part of that so that people are pumping more ground water down below next to your system. So should that be included in your allotment, I guess? [LR330 LR331]

MICHAEL DRAIN: Certainly, you know... [LR330 LR331]

SENATOR LOUDEN: I mean you're talking about six inches but yet you're giving some of it away to other people. So really you're getting more than... [LR330 LR331]

MICHAEL DRAIN: Sure. I'm wondering how much I can get myself in trouble with my directors back home. (Laugh) But the district is certainly aware of the benefit that we provide to ground water users. We often say that they're actually our largest customer from Lake McConaughy. It's not the folks who pay us for the delivery of the water, it's all of their neighbors and the folks in the Republican who get the greatest benefit from this project right now. And I think evidence of that is the fact that Nebraska is given credit in the Republican settlement for any of the flows that go from our system to the Republican. I think an example of that is the fact that within the Tri-Basin Natural Resources District, while they may be our neighbors, they are a different organization. The Tri-Basin Natural Resources District is allowed to allow continued use of wells within the Tri-Basin NRD and the Republic Watershed at different rates than the rest of the Republican NRDs are held to because of the recognition of the import of water from our area. So, yeah, we're very cognizant, Senator, of the fact that there is a tremendous benefit provided right now for free. [LR330 LR331]

SENATOR LOUDEN: Okay. In other words, what we were discussing out in Scottsbluff the other day about return flow, there would be a correlation here. Your return flow is coming back as ground water, whereas out there it usually goes...is diverted back to the river and they pick it up again with another surface water irrigation district. [LR330 LR331]

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MICHAEL DRAIN: That's correct. I was not at the hearing on return flows. But I would sure hope that whoever testified on the part of Central made the point that return flows from irrigation systems are a recognized historical part of the system and they are the supply that others rely on. And the same is true then down in our area. They're the reason that the Platte doesn't go dry as frequently as it used to. And they're the reason that the Republican River creeks have had the point at which they flow move upstream instead of downstream in the Tri-Basin area. [LR330 LR331]

SENATOR LOUDEN: Now, when you said you've cut down your seepage by 25 percent, do you have any estimate now, and I suppose you would have because you know how much water you put in the canal, you know how much water you deliver at the end. What is your percent of seepage then on those canals? [LR330 LR331]

MICHAEL DRAIN: I cannot tell you right now off the top of my head what the efficiency change was, Senator, but we can certainly get that information to you. [LR330 LR331]

SENATOR LOUDEN: But that... [LR330 LR331]

MICHAEL DRAIN: I'll holler over, add it to the list. Tim is saying 50, I don't... [LR330 LR331]

SENATOR LOUDEN: Okay. But that information isn't that hard to gather because... [LR330 LR331]

MICHAEL DRAIN: No, no. You can calculate that fairly easily. [LR330 LR331]

SENATOR LOUDEN: Um-hum. But you have improved it since you said 1950? [LR330 LR331]

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MICHAEL DRAIN: About the 1950s, yes,... [LR330 LR331]

SENATOR LOUDEN: Okay. [LR330 LR331]

MICHAEL DRAIN: ...is my recollection. [LR330 LR331]

SENATOR LOUDEN: Okay, it took you about 60 years? [LR330 LR331]

MICHAEL DRAIN: Well, we've been making improvements each year. You won't find in the chart a point in time where we suddenly go...get better in efficiency. What you'll find is a general curve over time, because each year you go in and you line one more canal or you put in one more pipeline. Until we got to the point where we're at today, which is not so certain that you want to do anymore of that given the interest in maintaining some amount of recharge and also by virtue of the fact that we don't have any money right now to spend on conservation if we wanted to anyway. (Laugh) [LR330 LR331]

SENATOR LOUDEN: Just to see how you want to get along with your directors. Do you think then that perhaps Central Power and Irrigation should assess some kind of a fee to some of these NRDs down there that rely on that recharge? [LR330 LR331]

MICHAEL DRAIN: Mike Drain's opinion is that there should be proper compensation for benefit provided, regardless of whether you talk about water or anything else. And it does seem right now like there is a minority population there which is carrying the load of the expense to maintain something that is benefiting the majority. And I do question that, particularly when we get to cases like today where you get into ironic situations where Central was interested in seeing ground water regulation start to occur because of the impact to our own supplies. The consequence is there's moratoriums on drilling wells. Our customers now running short of water for the first time in the history of the project, and now four years in a row and soon to be five in part because, and only in part, but in part because of ground water use upstream have had their supply reduced

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and now can't drill a well downstream to supplement it or at least they're told by the NRD if you do drill that well and supplement, from the mound that you've created you will have to provide an offset. You'll be responsible for coming up with that offset, even though all their neighbors have wells and are using it for free. And the reason they can do so is because that same person has paid the bill for the last 60 years. So I think there's some irony there. And I do think it makes sense to look at how you fund this. At the same time, I think anyone who does not see a benefit or doesn't want a benefit shouldn't be forced to pay either. [LR330 LR331]

SENATOR LOUDEN: As we're talking about return flow then those irrigation districts on the North Platte River up there in western Nebraska, what was it, nine years ago when they started getting their allocations cut in half? [LR330 LR331]

MICHAEL DRAIN: I believe around 2000, yeah. [LR330 LR331]

SENATOR LOUDEN: Then it's about nine years ago or a little bit before. Anyway, what effect has that had on your operation down there, because I was going to say you guys didn't cut your allocations then. Then evidently you didn't think return flow was that important to keeping McConaughy filled. Is that... [LR330 LR331]

MICHAEL DRAIN: We recognize that return flow is very important. I think that there is a misperception that there is a big difference between the way the Panhandle irrigators...when they start to allocate their supply and when we start to allocate our supply. It did happen later in years but the circumstances behind each of them is essentially the same. When they have enough water in their reservoirs for a full allocation they take it. And the distinction between them and us is that their reservoirs can't go as long. We designed and built our reservoir to carry a substantial number of acre feet for the number of acres served, particularly given that our irrigation system was originally designed to be much larger than it is and it's smaller than that. So we have more years of carryover. But when they have enough water in their reservoirs for a

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full supply they take it. And when our customers have enough water for a full supply they generally take it. And so the only real distinction is one on timing. If they have low snowpack up there it can only take them one or two years before they will have to allocate. We know that we have many more years we can go before that kicks in. But from the moment the return flows started to decline we were concerned. The other thing that I point out is they use their water supply in their reservoirs for irrigation exclusively. To the extent that they generate hydropower it's only because that water is on the way to irrigate. Lake McConaughy, on the other hand, stores water for the purpose of releasing for irrigation and for the purpose of releasing for hydropower production. And from the moment the return flows went away we were able to start cutting back our hydropower use, thus extending our irrigation supply much longer into the future. So we did take cuts, it's just that the cut to the irrigation is the last cut we take. [LR330 LR331]

SENATOR LOUDEN: Okay. Now then was your concern then, Central Power and Irrigation's concern then that they were losing revenue from generating power or they were losing the ability to fully irrigate their crop land? [LR330 LR331]

MICHAEL DRAIN: We carry both of those concerns. The hydropower hit is the first hit we take. And what that tells you is the priorities that we set in our system, that we will forego the hydro revenue in order to go longer in assuring the supply for the irrigation. We don't receive tax revenue and we're not-for-profit. Presumably, at some point if that goes long enough, if we always had enough water just for irrigation and never had enough water for hydropower production at some point the economics on our system would have to change because we have been running a couple million dollars a year deficit while we've been trying to keep from running out of water for our irrigators. [LR330 LR331]

SENATOR LOUDEN: Okay. One last question I have, four years ago is when you cut your allocations from 18 inches down to... [LR330 LR331]

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MICHAEL DRAIN: Yeah, I believe that's correct, four years. [LR330 LR331]

SENATOR LOUDEN: And what, four years ago the lake level was at what, 30 percent or something like that? [LR330 LR331]

MICHAEL DRAIN: Yes. [LR330 LR331]

SENATOR LOUDEN: How come you waited...how come you went all the way from full to 30 percent before you decided to cut your allocations? [LR330 LR331]

MICHAEL DRAIN: Because the primary purpose of that reservoir is to provide water for the irrigators. And so if we were to cut water releases from the reservoir earlier all we're doing is providing the pain that much earlier for our irrigators. We take it to the point where we feel we cannot provide the regular supply for our irrigators and then that's when they take the cut. That's similar to most systems, I think, including the Panhandle system. [LR330 LR331]

SENATOR LOUDEN: Okay. How come you didn't go from 18 to 14, you know, when you saw that you were down around 70 percent full or were you hoping that the good Lord was going to make it rain again? Or, I mean, that was my...I guess, it's what I have never gotten clear is why you didn't start a little sooner. Instead you went from 18 down to what, 6 or 7? [LR330 LR331]

MICHAEL DRAIN: That is a good question. I think that's one that we will probably be evaluating next...the next time we're coming into a drought. Part of what I can tell you, Senator, is Central had never had a water supply shortage, had never had a drought so severe that it required any allocation on the part of the district before. And so it's a new phenomenon for us. I don't know that the next time we find ourselves...and some day McConaughy will be full again, no matter what happens. You give yourself a long enough time frame there will be a line up of events to do that. (Laugh) I've heard twice it

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historically has been said that there would be a full Harlan again, and that one has come back before. So next time McConaughy is full and we find ourself on the decline, there will probably be some evaluation as to whether or not you should start cutting the irrigation sooner. But it is a risk analysis that you are playing because you never know when that year is that the drought is going to break. And you can be just as much criticized if you take people from 18 inches to 14 or 12 inches two or three years than you needed to, and then the drought breaks and you look back and say, turns out we probably could have done 18 inches those last three years and never run out of water. So we consult with our customers. The water rights are in Central's name, but they're held in trust for our customers. They are attached to their lands and we meet with them and figure out what their desires are. I could suggest to you that now the customers are in fact working from a completely opposite mindset. It seems possible that we could do an allocation slightly greater than the 6.7 inches this next year. And our customers were very clear, let's stick with 6.7 and see what we can do to shore up that reservoir. [LR330 LR331]

SENATOR LOUDEN: Okay, thank you. Other questions for...Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. You have a huge system in place here. And you had made the comment before that your customers possibly are paying for others to receive benefits for free. Who paid for this system to be developed? Was it your customers that built Kingsley and got McConaughy in place? [LR330 LR331]

MICHAEL DRAIN: The Central district took federal loans in the 1930s as part of all the work projects that were taking place. And those loans had to be repaid. We repaid those loans out of a combination of power sales and irrigation fees. [LR330 LR331]

SENATOR FISCHER: And they're all repaid right now? [LR330 LR331]

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MICHAEL DRAIN: Yes, I believe that's correct. [LR330 LR331]

SENATOR FISCHER: Do you know what the percentage was, whether it was generated by power or irrigation fees? [LR330 LR331]

MICHAEL DRAIN: No, I don't, but I'm sure Tim will be trying to find that out. (Laugh) I don't know what those percentages are. [LR330 LR331]

SENATOR FISCHER: And you're out of debt right now. [LR330 LR331]

MICHAEL DRAIN: That's correct. [LR330 LR331]

SENATOR FISCHER: But you're in a deficit you said earlier? [LR330 LR331]

MICHAEL DRAIN: That's correct. [LR330 LR331]

SENATOR FISCHER: And why? [LR330 LR331]

MICHAEL DRAIN: Because about 75 percent of our revenue comes from the sale of hydropower. And, as I mentioned, for several years now we have cut all discretionary releases for hydropower. The only hydropower that is made is either because the water is on its way to irrigations, or natural flow which is in the river generated downstream of Lake McConaughy that we don't have the option of storing in McConaughy anyway. We do generate with that. So our power production is significantly under normal. And while we have cut costs where we can, at some point if you're running on that kind of a deficit to your primary revenue source it's pretty tough. [LR330 LR331]

SENATOR FISCHER: But you said even right now you receive 75 percent on your revenue from power? [LR330 LR331]

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MICHAEL DRAIN: That was the long-term average. So right now we will not...currently we're not receiving 75 percent of our revenue from power and that's why we're running at a deficit. [LR330 LR331]

SENATOR FISCHER: But long-term, so would you say that the power paid off the system that was constructed? [LR330 LR331]

MICHAEL DRAIN: I would say power was the primary and it was by design that way. [LR330 LR331]

SENATOR FISCHER: And how many customers do you currently serve with power? [LR330 LR331]

MICHAEL DRAIN: We have one power customer. We sell all of our power direct to the Nebraska Public Power District so that... [LR330 LR331]

SENATOR FISCHER: Which would be a large number of the population in the state of Nebraska then is your customer? [LR330 LR331]

MICHAEL DRAIN: Yes. [LR330 LR331]

SENATOR FISCHER: So you could probably say a large segment of the population of the state of Nebraska paid off the system here that was built. [LR330 LR331]

MICHAEL DRAIN: I think you could say that. [LR330 LR331]

SENATOR FISCHER: Okay, thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wightman. [LR330 LR331]

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SENATOR WIGHTMAN: Thank you, Senator Louden. Mike, you do at the present time and have had, although in the past it wasn't a significant source of revenue, revenue coming in from lease of lots, is that correct? [LR330 LR331]

MICHAEL DRAIN: That's correct. [LR330 LR331]

SENATOR WIGHTMAN: Can you give us any idea what the relationship is between the revenues from lease of lots compared to service of irrigation customers? [LR330 LR331]

MICHAEL DRAIN: It's...boy, I can't but I bet Tim can. [LR330 LR331]

TIM ANDERSON: One-third. [LR330 LR331]

MICHAEL DRAIN: One-third? [LR330 LR331]

TIM ANDERSON: I think it's one-third of your (inaudible). [LR330 LR331]

MICHAEL DRAIN: Yeah, you got the wrong guy sitting at the table here. (Laughter)
[LR330 LR331]

SENATOR FISCHER: He's hiding back here. [LR330 LR331]

SENATOR WIGHTMAN: So you really have a significant source of revenue in the lease of lots as of now. [LR330 LR331]

MICHAEL DRAIN: Sure, sure. They've... [LR330 LR331]

SENATOR WIGHTMAN: But that just started about 15 years ago. You had almost none until then. [LR330 LR331]

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MICHAEL DRAIN: Yeah, about ten years ago, I think, is when we started receiving fees from Johnson Lake. It was a fairly small amount. But it has gone up this last year because of the reappraisal of the lots. The leases provide for a ten year look, and so it's been increasing. So yeah, about...I assume Tim is right and not making that up that that represents about a third of the irrigation revenue. Certainly it would be much less than a third of the district's total revenue. [LR330 LR331]

SENATOR WIGHTMAN: Even now when you're not generating any power? [LR330 LR331]

MICHAEL DRAIN: Well, as I mentioned we still generate power when the water is on its way to irrigation. And we still generate some power with the water that comes in below McConaughy. So we're probably getting about half our revenue from power that we normally do. [LR330 LR331]

SENATOR WIGHTMAN: Even during the last five or six drought years? [LR330 LR331]

MICHAEL DRAIN: Yes, yeah. [LR330 LR331]

SENATOR WHITE: Thank you. [LR330 LR331]

SENATOR LOUDEN: Other questions? Well, if not, I thank you, Michael. [LR330 LR331]

MICHAEL DRAIN: You all know how to get ahold of Tim and Tim can collar me if you have any other questions. [LR330 LR331]

SENATOR LOUDEN: Yeah, yeah. And did I get this written right, you're in...it's Drain, D-r-a-i-n? [LR330 LR331]

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MICHAEL DRAIN: Yes, go ahead. You can hit the joke right now. (Laugh) [LR330 LR331]

SENATOR LOUDEN: We ought to be able to remember that when it comes to Central Power and Irrigation, I guess. Thank you a lot. [LR330 LR331]

MICHAEL DRAIN: I suppose if Senator Flood this system things would be a lot better. (Laughter) [LR330 LR331]

SENATOR FISCHER: That's good. [LR330 LR331]

KENT MILLER: Good morning, Senator Louden and members of the committee. My name is Kent Miller, K-e-n-t M-i-l-l-e-r. I'm general manager of the Twin Platte Natural Resource District. And our offices are located in North Platte, Nebraska. I thought I should get up here since Senator Christensen mentioned my name several times earlier in his presentation. But I do want to make some comments and then I'll try to respond to some of the questions you had in regard to the South Platte River Compact. Initially, my testimony is in opposition to allowing transfers, but I want to emphasize that it's at this time. The Twin Platte NRD along with the other 22 NRDs in our state association are participating in an application for the Nebraska Environmental Trust to fund a state water plan, development of a state water plan. That's something that we believe is needed in Nebraska. Most western states have current state water plans, Nebraska does not. I've been involved in this since early 1970s. And I think it was in the late sixties that there was a water plan put together. I think I've seen it on my library shelf here a few years ago. But essentially, we do not have a current statewide water plan. I think that that's absolutely necessary in the state of Nebraska. And I think there would be an opportunity then to identify possibilities of how best to use the water in the state. But I think that that type of information needs to be available before water starts to be moved. But I would like to specifically talk about the Platte basin because I know there is some interest in possibly moving water from the Platte basin. I think as all of you

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know, the Platte River basin is over-appropriated. You know it's the only basin over-appropriated. All future basins would be fully appropriated if they reach that point. There will be no more over-appropriated basins. But at a minimum, I think that an over-appropriated basin should be off limits for transfers out of and particularly off limits until the basin becomes fully appropriated, and in the case of the Platte also off limits until the Platte recovery program, implementation program is satisfied, which is a huge impact on the Platte basin right now. We see demands in the Platte basin, I hope I get them all here, but initially as a part of the Platte recovery implementation program and as a part of the LB962 we have to return the Platte River basin to 1997 levels. The figures for that, the figures for that out of the COHYST Study, the Cooperative Hydrology Study is 26,000 acre feet. We also have to get Platte River basin back to fully appropriated. And that's required by LB962. We don't have a definite number on that. There is a lot of different numbers floating around out there, but we all know that it's going to be much larger than any of us want it to be. But the Platte River basin has to be returned to fully appropriated. When you look at the Platte River recovery implementation program the first increment of that is, I think that first increment is 13 years, is to provide 130,000 acre feet of water in the habitat area. Only half of that, essentially, has been found at this point. The other half is being attempted to be found through identified possible water action plan projects. We're all fearful there could be a second increment. When you start working with the Endangered Species Act at that level, you know, we see figures of 400,000 plus in a second increment. You know, we don't know what that will be. You know, we certainly hope that when we get through the first increment we've satisfied the Endangered Species Act. But we don't know where that will be. So my basic premise of the testimony in regard to possible transfers is the state of Nebraska needs a state water plan. The NRDs are trying to work towards finding money to get to that. And secondly, the Platte River basin, which is over-appropriated at a minimum, should be off limits until we can get back to fully appropriated and satisfy the Platte recovery implementation program. Okay. There was a number of questions and discussions in regard to the South Platte River Compact. The South Platte River Compact was entered into in the early 1920s. As much research

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as I've done in that you'd think I could give you an exact date but, like Mike said, I'm an engineer but I don't always remember dates real well. It's 1921, 1923, I wish I could have my file with me to tell you the exact date. But the background of that is that in the late teens there was litigation filed by the Western Irrigation District against Riverside Irrigation District and others in the South Platte basin in Colorado, because Western Irrigation District, which is an irrigation district just inside Nebraska on the South Platte River, was not getting (inaudible) water out of Colorado. As a result of that litigation and as a result of experience that Colorado had in working towards a compact on the Colorado River, there was a proposal that was primarily spearheaded by an individual named Delph Carpenter who represented Colorado to promote the development of a compact on the South Platte River between Nebraska and Colorado. And those discussions went on for several years. Fortunately, there's a large amount of information from the Delph Carpenter collection that's available at Colorado State University. I've done extensive review of that information, but it's a lot limited. But the premise for putting together the South Platte River Compact was two purposes. One was to provide a guaranteed flow for the Western Irrigation District, and that's the summer provision. There was also a winter provision in the South Platte River Compact and that winter provision provided that there could be up to 500 CFS of water available for the state of Nebraska between October 15 and April 1 if that water is available in the lower section of the South Platte River in Colorado. The lower section is the area below Balzac gauging station and the Washington County line, or the easiest way for me to describe it is it's near Ft. Morgan, Colorado. And it's...so if there is 500 CFS in that lower section, it has to...it's available for Nebraska in that time frame with the first 35,000 acre feet of that amount reserved for projects in Colorado that were developed after the compact was signed. The background or the basic premise of that is that Colorado convinced Nebraska that because of the irrigation development that was occurring along the front range that there would be adequate return flows. And we talked a lot about return flows in the previous testimony. There would be adequate return flows that there would also be 120 CFS available for the Western Irrigation District in the summer, and that there would be 500 CFS available for Nebraska in the winter. We're not seeing that. The

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whole basin has changed since the 1920. But that was the basis, that was the premise for putting that compact together. Western Irrigation District rarely gets 120 CFS. It's not uncommon for them to be getting around 20 to 25 CFS out of the river in the summer. I think that...and there's also senior rights to that 1921 date in the lower reach of the South Platte in Colorado. I think that there is a probability that there is water available in the winter. And I was telling Senator Christensen before the hearing this morning that I've been promoting Nebraska to look at that provision of the compact for the last 30 years. People have just started listening and thinking about it the last 5 years. But essentially, it's an opportunity, I view it, for Nebraska that's set there for over 80 years. There are a lot of issues that have to be looked at before that opportunity can be put to use in Nebraska. It's not as simple as looking at the flows that are coming into Nebraska today, because flows that are coming into Nebraska today, a portion of those are probably water that was generated from transmountain diversion. There's a large amount of water that is brought over from the western slope to the front range to utilize by the communities along that front range. Colorado law requires that any transmountain water brought over be used to extinction. They're doing a better job of doing that, but they probably aren't fully using that to extinction yet. There has been a lot of activity to reuse water. The city of Aurora has, I don't know whether it's completed, but if it's not they're building a pipeline that will run from the South Platte River south to near Cherry Creek Reservoir to reuse water. Their intent is to reuse that transmountain water. So it becomes very difficult to identify the water that's in the South Platte River today that is not transmountain. The other issue is that Colorado convinced Nebraska to sign this compact back in the twenties because there would always be the return flows there. Colorado has since had a large development of ground water irrigation in the South Platte basin. If you drive on I-76 to Denver in the summer you'll see a lot of pivots running along that...along I-76. Those weren't envisioned in the 1920s when the compact was put together. Colorado does have and has had in place for over 25 years a law that any development of ground water they have to have plans of augmentation so that that ground water does not impact the flows in the South Platte River. My observation is that that is not implemented real well and particularly the closer you get

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to Nebraska, because there's a desire in Colorado that they dry that river up at the border coming into Nebraska. There was litigation in Colorado a number of years ago that required that all plans of augmentation be court approved and not state engineer approved. In Colorado their water laws are administered through the court system, through their water courts, very different from Nebraska's administration. But there were a lot of plans of augmentation that were state engineer approved. There was an organization called the South Platte...Ground Water Association of the South Platte that no longer exists. They were the ones that held a lot of the plans of augmentation for these ground water wells. There was a lot of paper water. The Twin Platte NRD board of directors directed me, several years ago, to make a filing for that winter provision of the South Platte Compact. We began the legal research as to what it would take to accomplish that because we fully believe and understand that when that occurs, you know, Colorado even though, you know, a compact is agreed to by the two states and is ratified by Congress. So my legal analysis, being an engineer, is that it should just happen. I doubt that will be the case. I suspect that just as soon as Nebraska makes the proper filings that there will be all kinds of legal analysis done on their side to prevent or stop this from happening. So those are issues that have to happen. But when my board of directors, several years ago, directed me to initiate the legal research and to make that filing, at that time we were working with the South Platte River coalition. That coalition was made up of representatives from the Central Platte NRD, the South Platte NRD, the Twin Platte NRD, Western Irrigation District, Central Power and Irrigation and Nebraska Public Power. That coalition asked the Twin Platte NRD board to rather than make the filing by the Twin Platte NRD that there is to be a coalition and there is to be an effective coalition that the coalition be allowed to make that filing. Our board of directors entered into an agreement with the coalition to allow that. The coalition now is working to refine the legal research so that a filing can be made on behalf of that coalition. And it's continuing to look at the...what water would really be there. One of the questions that was asked is...or question was, was the project ever constructed and what was the project and what was the intent of the project? There is evidence in eastern Colorado. I'm not aware that it goes into Nebraska either, but there is evidence

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in eastern Colorado...in Colorado that the canal construction was started. When you drive I-76 and you go through the interchange at Julesburg and go on west, on the north side of I-76 you can see where the canal was actually constructed. You can also, east of that interchange and on the south side, you can see some evidence where that canal was constructed. But the canal was never completed. You know, I've heard stories told that back in those days contractors would come through. They would convince local people that...to build a project. They would start raising money. They would actually start construction. And then some night they would all disappear. Whether that's what happened, I don't know. The other thing that I have never been able to find a definitive plan of what the project was to be. When you read the compact, the compact says, 500 CFS for a Perkins County canal, and then it says or sometimes known as the South Divide canal. So it actually had two titles. My best guess is it was for...it was to irrigate lands south of the South Platte River in southern Keith County, possibly northern Perkins County. What I do know is that when the compact was being considered that the reason the winter provision was put in there was at the request and the encouragement of the Keith County community club. The president of the Keith County community club was Mr. Goodall. If you know some of the history of Ogallala, there was Goodall Manufacturing. But he was president or chair of the Keith County community club. And it was the Keith County community club that urged the negotiators for the compact to have this winter provision. And I have found a number of communications from the Keith County community club with Delph Carpenter and with the negotiators of the compact. One of the communications was just shortly before the compact was signed was that...a letter from the Keith County community club requesting what needed to be done so that they could make the filing for that water right just as soon as the compact was entered into. Once the compact was entered into nothing happened in regard to that winter provision. I have found no more communication from the Keith County community club. And, unfortunately, historical documents in Nebraska are very much lacking from that time frame. I've attempted to look at the...in the state archives, the Keith County archives, any source I can find. And I don't know why it went silent and that was never implemented. But there is a desire in the Platte basin, there is a need in the Platte basin

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to use the winter provision of the South Platte River Compact if it is feasible and can be done. So I hope I've answered some of your questions, Senator. I know you asked me to get up and talk about that. And if you have other questions in that regard, I'd also be happy to try to entertain those. [LR330 LR331]

SENATOR LOUDEN: Okay. Questions for Kent? Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: Thank you, Chairman Loudon. I gather, Kent, that what you're saying is Nebraska needs to develop an offense. We've been playing defense on water maybe too long, and we need to... [LR330 LR331]

KENT MILLER: That's exactly right. That's exactly right. [LR330 LR331]

SENATOR WIGHTMAN: And, of course, we're talking two different basins, primarily (inaudible) on the Republican where we've been playing defense all the time. But we haven't been playing offense maybe anywhere, is that a...? [LR330 LR331]

KENT MILLER: Well...and I think...you know, it's...when I look at the Endangered Species Act and the Platte River Recovery Program, it seems to me like we're playing defense there too. But I think we have a lot of opportunities in the Platte Basin, but we have a huge amount of demands in the Platte Basin, you know, and we're taking steps to meet those. We're working on provisions for trying to find alternative sources of water so that we can get back to fully appropriated. [LR330 LR331]

SENATOR WIGHTMAN: You talked about a coalition perhaps looking into this... [LR330 LR331]

KENT MILLER: In regard to the compact, we're talking about a coalition. In regard to the state as a whole, I think a state water plan is needed. [LR330 LR331]

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SENATOR WIGHTMAN: Now, as opposed to a coalition of several of the NRDs, is it possible the DNR may be get involved, because it really affects the water resources throughout the state, I assume. [LR330 LR331]

KENT MILLER: That's a very good question. The original coalition, DNR was a part of it. The current coalition that's preparing to utilize that water provision if at all possible, DNR is not a part of it, and that's because DNR potentially is the judge. You know, when you have a water right filing, potentially DNR is the one you'd make the filing for. And so there was an agreement that it was not appropriate for DNR to continue to be a part of this coalition because they're the ones that would have to potentially... [LR330 LR331]

SENATOR WIGHTMAN: Arbitrate it. [LR330 LR331]

KENT MILLER: ...make the decisions. [LR330 LR331]

SENATOR WIGHTMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wallman. [LR330 LR331]

SENATOR WALLMAN: Thank you, Chairman Louden. Thank you for testifying. In regards to water conservation limits on how many acre-feet they can use, is Colorado doing anything, do you know? Because the aquifer is going down in Colorado. [LR330 LR331]

KENT MILLER: Colorado...I don't know that...I don't know on the surface water side. On the ground water side, they've had in place laws for probably almost 30 years now that require plans of augmentation. Theoretically, any ground water well that's been developed in the last 30 years in Colorado had a plan of augmentation that would not impact the South Platte River. I, however, do not believe that is the case. [LR330 LR331]

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SENATOR WALLMAN: Thanks. [LR330 LR331]

KENT MILLER: I'm learning a lot about what's going on in the South Platte River in Colorado, and I don't think they're doing all they say they're doing. [LR330 LR331]

SENATOR LOUDEN: Senator Carlson. [LR330 LR331]

SENATOR CARLSON: Senator Louden. Kent, earlier, what reduction of water use in the Platte River Recovery Program is required in stage 1? [LR330 LR331]

KENT MILLER: I believe it's 130,000 acre-feet. [LR330 LR331]

SENATOR CARLSON: Okay. [LR330 LR331]

KENT MILLER: I'm looking back at Brian: Is that right? For (inaudible) it's 130,000 acre-feet? [LR330 LR331]

[]

BRIAN BARELS: It's 130 to 150 in the first increment, with 80 of them being provided by three up-front projects. [LR330 LR331]

KENT MILLER: Okay. The answer is...I'm sorry, but the answer is... [LR330 LR331]

SENATOR LOUDEN: Can you repeat all that so we have it... [LR330 LR331]

KENT MILLER: That's what I'm going to do. The requirement in the first increment is 130,000 to 150,000 acre-feet. There's been 80,000 identified through the environmental count to Lake McConaughy, the Tamarack project in the South Platte River Basin in Colorado, and then the Three-Brook (phonetic) project in Wyoming. [LR330 LR331]

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SENATOR CARLSON: Okay. And earlier initially you talked about the 23 NRDs having applied for a grant to develop a state water plan. Are there stakeholders other than the 23 NRDs? [LR330 LR331]

KENT MILLER: The application was made by our state association with the 23 NRDs as cosponsors. I think Ron Bishop is going to be testifying here in a little bit, and he was the one who drafted that application so I think any questions in regard to that application would be better asked of Ron. [LR330 LR331]

SENATOR CARLSON: Okay. Let us go back to the reduction of water use, the 130,000 to 150,000 acre-feet. Eighty thousand has been identified, and you mentioned Tamarack. So the vegetation control is a part of this. [LR330 LR331]

KENT MILLER: It could be. The vegetation control is not a part of those three. The Tamarack Project is a project, is a retiming of water. [LR330 LR331]

SENATOR CARLSON: Okay. That's what threw me. I heard it wrong, so okay. Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Dubas. [LR330 LR331]

SENATOR DUBAS: Thank you, Senator Louden. If you are able to get the basin back to fully appropriated, would that...would you be able to meet the demands of the Platte River recovery plan by being fully appropriated? [LR330 LR331]

KENT MILLER: No, not necessarily. They're two totally separate issues. The only place they fit together is getting back to '97. [LR330 LR331]

SENATOR DUBAS: Okay. [LR330 LR331]

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KENT MILLER: The recovery program requires the state to get back to '97. LB962 requires that the river be gotten back to 1997. Then beyond that it's almost two separate issues. To get back to fully appropriated versus what may come in the Platte River Recovery Implementation Program. [LR330 LR331]

SENATOR DUBAS: So they're two very separate and distinct... [LR330 LR331]

KENT MILLER: That's the way I view it. I mean, I know that they're really intertwined but LB962 requires it get back to fully appropriated. The Platte River Recovery Implementation Program, it's kind of an adaptive management, let's see how things are working; first increment, possibly second increment. [LR330 LR331]

SENATOR DUBAS: Okay. Now, if we go after this water that Colorado allegedly owes us, how much of a help would that be as far as...? [LR330 LR331]

KENT MILLER: You know, that's one of the things that we're trying to get our arms around is to how much water potentially could be there. My opinion is we are going to go after it in the Platte River Basin. The question is how much, so then we can design the use of it. And in the designing of the use of it we don't want to impact negatively those who have already been using that water, and that's one of the reasons for having the coalition. The initial study that we had done by a consultant, there's an indication that a substantial amount of that water could be there. But let me give you some parameters. If you have 500 cfs available in that period of time--now it's not there--but even if today you had 500 cfs available in that period of time, that equals to 165,000 acre-feet of water. You take off the 35,000 that's reserved for Colorado, there's still 130,000 acre-feet of water. Now, is 130,000 acre-feet of water going to be there? Probably not, but there's probably going to be an amount somewhat below that and I think it would be an amount that we can justify going after. But that's just my perception. That's why we are spending a lot of time right now on doing an analysis of what water

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could be there, because it gets so complicated when you start looking at plans of augmentation in Colorado, when you start looking at transmountain water. [LR330 LR331]

SENATOR DUBAS: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. Kent, the state has been focused on the compact between Nebraska, Colorado, and Kansas--the Republican River Compact--and that, in my opinion, is where our focus has been. One of your comments I thought was interesting. You said that DNR had pulled out of this coalition on the compact on the South Platte with Colorado because they would be the judge. Why would they be the judge in that case? [LR330 LR331]

KENT MILLER: One of the legal research items that we're looking at now is how do we make that South Platte water right available in Nebraska? You know, is it a water right that's available for the Keith County Community Club because there was dialogue at that point and therefore they don't exist anymore so Twin Platte NRD is Keith County; is it available for us? We don't know who it potentially is available for. We don't know what kind of filings may have to be made. So this other six members of the coalition thought it was better if DNR was not a part of that coalition. What we're looking at, and I don't even want to try to understand the Republican River Compact, but the South Platte River Compact the (inaudible) provision provides for a water right. [LR330 LR331]

SENATOR FISCHER: So DNR has pulled out with, I guess anticipating that the water is coming, and they have to then judge who gets the right? Shouldn't our first objective be as a state to get the water? [LR330 LR331]

KENT MILLER: Yes. [LR330 LR331]

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SENATOR FISCHER: Wouldn't it be better if DNR was involved then from the beginning in trying to get the water and then make the decision on where the rights are going to be allowed? [LR330 LR331]

KENT MILLER: Well, we don't think so, but you've got to understand I'm representing the Twin Platte Natural Resource District. But we don't think... [LR330 LR331]

SENATOR FISCHER: You would rather they not be involved at this point? [LR330 LR331]

KENT MILLER: We want to get the water into Nebraska. Our first priority are the needs for the Twin Platte Natural Resource District and the South Platte River Coalition. [LR330 LR331]

SENATOR FISCHER: So you would rather they would be involved at this point. [LR330 LR331]

KENT MILLER: Our opinion... [LR330 LR331]

SENATOR FISCHER: You would rather not answer this question. (Laughter) [LR330 LR331]

KENT MILLER: Our opinion was that they should not be involved at this point, and because of the water right filings that are going to have to occur. [LR330 LR331]

SENATOR FISCHER: Are you aware of a compact between the state of Nebraska and Wyoming in dealing with the Niobrara River? [LR330 LR331]

KENT MILLER: No. [LR330 LR331]

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SENATOR FISCHER: Okay. Thank you very much. [LR330 LR331]

SENATOR LOUDEN: Senator Christensen. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you, Chairman Louden. Thank you, Kent, for testifying. You made a statement and maybe I misunderstood it, but you said you generally oppose water transfers until you guys are back in compliance to the '97 level, so would I be safe to assume that you would just as soon see the damage that was occurring at Ashland and at Grand Island rather than have some of that pressure taken off? [LR330 LR331]

KENT MILLER: You know, I...one of the questions asked earlier is, where is the water in the river that's flowing out of the state? I don't see those flows coming through the Twin Platte NRD. I don't see them coming through the central part of the state. You know, if there's a way to return that damaging water in the Ashland area to western Nebraska, that would be wonderful. [LR330 LR331]

SENATOR CHRISTENSEN: But I guess my point is, if there's any water moving that could be taken out of that stream to alleviate damage downstream, it's beneficial for the state of Nebraska. That's one of the reasons why I think if there's any point to diversion anywhere in the state that can alleviate property damage, potential lives and things this way across the state, it's good to alleviate that pressure, whether that comes to the Republican, the Blue, or anywhere else below that point--and it might be moving water further north down to the Platte, not just Platte down to the Republicans or Blues or something down that way. You know, I guess I'm looking at it as if there's a way of benefitting the people of Nebraska, you better alleviate that pressure. And work...you said you favored--and I agree with you--at looking at a statewide water plan. That only falls in line with trying to alleviate property damage and problems across the state at any point in time. I understand your focus is getting back to '97 levels and I don't think

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anybody is trying to take that water from you. It's just if there's a way of alleviating pressure due to flooding, damage on downstream, by putting water into lakes and moving to another area, I think it's beneficial for the state. I guess that was my objective. [LR330 LR331]

KENT MILLER: And you're making a great argument for a state water plan. But in the meantime, with all of the demands on the Platte River Basin, we fully intend to utilize any excess water in the Platte River Basin, not only to get to '97 but to get to fully appropriated water action plans for the recovery program. And so in our viewpoint there is not excess water nor should there be excess water in the Platte Basin until those demands are met. But we absolutely need a state water plan to look at what are all the opportunities. [LR330 LR331]

SENATOR CHRISTENSEN: Because I agree there has not been excess coming through your district, but it's been further east. Thank you. [LR330 LR331]

SENATOR LOUDEN: The questions I have, Kent, and as kind of Senator Fischer alluded to it, but you mentioned that there was a compact with Colorado on that South Platte River, and nothing much ever came of it, and also on the Niobrara River there's a compact with Wyoming and the DNR has never pursued it. They've been asked to inquire about it for well-drilling over in Wyoming. Should there be something set up, I guess, that this DNR should be, there's either have some people kind of dedicated to following up on these compacts and getting some of our water out of these other states? I mean, up until then everybody thought there was plenty of it, but as you say that development that goes in there south of Wiggins and all that country like that has come on board over the years, and consequently there's less water being used. Should we set up something in that DNR agency to mostly just dedicate it to try to get some of this compact water settled? Or would that be with your state water planning end? [LR330 LR331]

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KENT MILLER: Well, I think that possibly, yes, I think that's something that should be looked at. Our analysis of, so far, of the South Platte River Compact is that would not help, because the way the South Platte River Compact was set up it was set up to utilize a water right. And the way DNR is set up, in our analysis, is they administer the water rights. So someone else had to take that initiative to implement that water right, and that's what we're doing. But in hindsight, sure, I mean there should have been some effort to be bringing that water into Nebraska years ago, and if we could back up the train, whether it's the state or the local folks, we should have been working on it. But 80 years after the compact was signed, the language still exists as to what's in the compact today. We're doing our best to analyze it and to get that water into the state, and as much as the Twin Platte NRD would have liked to have focused on that water all for the Twin Platte NRD, we're working with the coalition and that coalition extends from Columbus, west. [LR330 LR331]

SENATOR LOUDEN: Well, yeah, because I cross the South Platte River every time I go home, usually there at Ogallala, and here last spring was the first time I saw it flowing, I think, for quite awhile. As I said before, that development out there around Wiggins and all that area like that, the first time I ever went through there was in 1954 and it was nothing but jackrabbits and sagebrush, and now here a year or so ago I flew over that and there's nothing but circle pivots. So somewhere along the line it had to make a difference, and I think probably Nebraska was a little bit lax in following through on that. So we'll see if we can't find a way to pursue some of those a little bit better. [LR330 LR331]

KENT MILLER: I suspect it's not going to be too much longer, when I go to Denver I may have to go through Wyoming. [LR330 LR331]

SENATOR LOUDEN: (Laugh) It hurts that bad, huh. Other questions for Kent? Thank you for testifying, Kent. [LR330 LR331]

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KENT MILLER: Thank you. [LR330 LR331]

SENATOR LOUDEN: The next testifier. [LR330 LR331]

DAN SMITH: (Exhibit 3) Chairman Louden, members of the Natural Resources Committee, my name is Dan Smith, D-a-n S-m-i-t-h. I'm the general manager of the Middle Republican Natural Resources District. I'm pleased to be able to be here to offer testimony in support of the concepts identified in all three of the resolutions that will be considered today. The past policy of the board of directors of my district has been to support any effort that would bring increased supplies into the Republican River Basin. With that said though, I guess I must condition our support with the concerns we'd have over the complexity of the surface water system, the primary source of any of these transfers, and the legislative and administrative steps that would have to be taken to implement those concepts. To some extent it makes sense to import some excess supplies, whether it be from into the Republican Basin or into or out of basins if they have excess supplies, but we can't always rely on the imported water to help meet our state allocations in the Republican River Basin. In normal years the controls now in place in the basin should keep Nebraska in compliance. Our problem has always been periods of drought, whether supplies would be even available in those drought years would be a question that can only be answered at the time of the need. If we rely only on imported water, it may not be available. The hardest consideration would be determining what are the excess flows that could be diverted. There is almost always a downstream user that could be affected by a new diversion. The inefficiencies of the surface water system make it questionable to divert water very far for a new use. Losses of 40-60 percent are common. If this water were going to be transported in more open canals after it got into a basin, additional losses would occur there. In the Platte system, even timely flood flows have some benefit to wildlife species. While runoff from cities seems like a free source, it too contributes to the total flow of a river system. Assuming that projects of this nature were feasible, administrative authority would probably have to rest with the Department of Natural Resources. They would have to

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determine the needs and the impacts on both of the basins affected by any transfer. They definitely would be the keeper of the numbers in the Republican River Basin. Integrated management is implemented in an NRD by adopting rules and regulations for our ground water management area. Under the controls that are available to us at the current time, those would only be ground water controls. Surface water authority and the controls that could be adopted, rest with the department. As with any program, costs of the project in relation to the benefits received are an important consideration and must be weighed against other actions that could be taken. I'd like to thank Senator Christensen for raising these issues through these resolutions. Should the committee decide to move forward with legislation directed toward this issue, I know all the NRDs would work together to offer whatever assistance we can. I'm sure that the Middle Republican NRD and the other districts in the basin will continue to work toward the least expensive and most beneficial system of management we can find. Thank you.
[LR330 LR331]

SENATOR LOUDEN: Okay. Thank you. Questions for Dan? Senator Christensen.
[LR330 LR331]

SENATOR CHRISTENSEN: Thank you, Chairman Loudon. Dan, thanks for testifying. Do you think, as Kent said, it would be good to look at the state water use, looking at a master plan? Are there hang-ups to doing that? What's your opinion? [LR330 LR331]

DAN SMITH: Oh, no. Absolutely. The state water plan issue has been addressed a couple times. All of the individual NRDs have ground water management plans that meet our own local needs but they don't mesh into any kind of a state network. With a state water plan we could identify those issues that are out there, prioritize them, set up a system that looks at the overall uses and tries to come to a common, most-economical, most-beneficial use of our supplies. You know, were water, like electricity where we can send it back and forth on the lines, it would be a lot easier. The areas that have excess water, if you will, are not always near the areas that might have

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deficiencies. And, in general, we can't push it too far uphill, but it almost needs to go from a west to east, and as you get further east, of course, you've already identified increased excess supplies there. So, yeah, a state water plan looks to me like it would be an important way to go, and while it's been touched on a number of times over the years it's never been pulled together into a real comprehensive plan that would work for all of us. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: Thank you, Senator Louden. Dan, can you tell us what other states have with regard to an overall statewide water plan? Does Colorado have one? Does Wyoming? [LR330 LR331]

DAN SMITH: Wyoming, I don't know about. I'm almost sure Colorado and Kansas both have a generalized...now, Kansas is doing some revamping on some of their programs in the western part of the state that would look at some reductions for their uses. [LR330 LR331]

SENATOR WIGHTMAN: I know Kent talked about the fact that there had been strict water restrictions for 30 years, I think he said, in the state of Kansas, and I didn't know whether that was part of an overall statewide water plan or not. [LR330 LR331]

DAN SMITH: In both of those states the structure of their regulations in which they have water as opposed to ground water and surface water as we do makes it easier to pull together, if you will, not necessarily a comprehensive plan but an overall state plan that would look at those relationships. Nebraska's difference with ground water and surface water makes it a little difficult to identify those overlaps in those relationships. [LR330 LR331]

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SENATOR WIGHTMAN: But it is your feeling that we could make better use of the water statewide if we had an overall plan. [LR330 LR331]

DAN SMITH: I would certainly think that would have to be a result. I imagine there are things in the state plan that may not be desirable to everybody, but I think a state plan would have to look at an overall system that developed the best utilization--best beneficial uses. [LR330 LR331]

SENATOR WIGHTMAN: Do you have any thoughts on how long it might take to develop such a plan? [LR330 LR331]

DAN SMITH: No. I think in reality you'd have to be looking at a couple years, a process. You know, if you could start today I think it would take at least two years to pull those together. [LR330 LR331]

SENATOR WIGHTMAN: Or would it be more like five or ten? It could be that long. [LR330 LR331]

DAN SMITH: Well, it could very easily be; very easily be. [LR330 LR331]

SENATOR WIGHTMAN: Would you see that being developed by some sort of a concerted effort of the Department of Natural Resources? They would almost have to be the primary mover in that regard, wouldn't they? [LR330 LR331]

DAN SMITH: I would think so. You know, they're obviously going to have the lead on the surface water issues, you know, and the districts would have to be involved in the ground water issues, but then you have to also bring in DEQ when you're looking at water quality issues that are related to both the ground and the surface water, and quality issues would have to be an important component of that overall plan. [LR330

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SENATOR WIGHTMAN: Has there ever been...have you ever gotten far enough in the study of whether we should have an overall plan to even make any estimates as to the cost? [LR330 LR331]

DAN SMITH: No. Kent made reference to an older plan. I know in the late...or through most of the '80s the Natural Resources Commission did a number of water policy studies. They looked at ground water/surface water conjunctive use. There were a number of those studies that were pulled together. Recommendations, alternatives were made through that process, and there's, oh, 10 or 12 volumes to those individual components that at the time could have very easily been pulled into a state plan, and it was just never done. [LR330 LR331]

SENATOR WIGHTMAN: Thank you. [LR330 LR331]

DAN SMITH: Yes, sir. [LR330 LR331]

SENATOR LOUDEN: Senator Carlson. [LR330 LR331]

SENATOR CARLSON: Senator Louden. Dan, this...you didn't really bring this up, but I'm still trying to get it straight in my mind. On this grant that's been applied for to develop a state water plan, is that just the 23 NRDs, and then you would develop your water plan and then bring other entities into it, or what entities would be a part of that planning process? [LR330 LR331]

DAN SMITH: And I'm going to apologize, sir, but I'll give you the same answer Kent did: Ron put together the grant and ran it through our state association. (Laughter) [LR330 LR331]

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SENATOR CARLSON: I forgot Ron is coming. Excuse me. Excuse me. (Laughter)
[LR330 LR331]

SENATOR LOUDEN: The question I would have, Dan, this Water Policy Task Force is supposed to sunset in another year. Could some type of a setup like that work to develop this water plan or be the ones to develop that plan, or should this more of your professional people in the agencies, like your engineers out of your NRDs and the DNR people and that sort of thing, or could it be set up on the same order as that task force was? [LR330 LR331]

DAN SMITH: I honestly don't know how to respond on that either. There are components of a plan that would require, at least in my mind, the professionals get together and look at those major components. There are, of course, a number of policy decisions that are going to have to be fleshed out, if you will, and whether that comes from a group similar to the task force or whether it's all done at the legislative level, I'm not sure exactly how I would look at that right now. And I just don't know how to respond to that, sir. [LR330 LR331]

SENATOR LOUDEN: Okay. Thank you. Well, seeing no other questions, thank you for your testimony, Dan. [LR330 LR331]

DAN SMITH: Thank you. [LR330 LR331]

SENATOR LOUDEN: Next testifier, please. [LR330 LR331]

RON BISHOP: Senator Louden, members of the committee, my name is Ron Bishop, B-i-s-h-o-p, and I'm general manager for the Central Platte Natural Resource District here in Grand Island. I plan to be short and sour--not short and sweet, but short and sour. We've got problems here in the Platte Valley. We've got problems in the Republican. We've got problems in a lot of the basins within the state of Nebraska. The

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resolutions that you have before you today propose using some of the Platte River water to help resolve the problem in another basin. The problem is that in the Platte we're already overappropriated clear down to Elm Creek and fully appropriated clear down to Columbus. We have joined with the state of Wyoming and Colorado and the Department of Interior on a Platte River program to address the habitat for threatened and endangered species. As part of that agreement, the U.S. Fish and Wildlife Service has adopted so-called target flows--target flows for those threatened and endangered species. Those target flows are not met an awful lot of the time under current conditions. They have identified something like 431,000 acre-feet of water that is needed to be added to the Platte at certain times. Now certain times those flows are exceeded, and so when they are exceeded that would be available if we had some way of capturing it and bringing it back at the time that would satisfy those target flows. The problem is the shortage is 431,000 acre-feet of water, and the excess if you count, even like the floods in the '80s when we had four times normal flow coming down the river, the excess where we have flows larger than those target flows only amounts to 399,000 acre-feet of water. So even if we use every drop of water, even in the big floods like we had in '82 and '83, we're still over 30,000 acre-feet of water short of meeting those target flows that is part of the Platte River program--31,000 acre-feet of water--which means that has to come...if those target flows are satisfied, those have to come out of irrigated agriculture because that's the primary user in the Platte Basin. We're certainly not going to take that water away from drinking water for the city of Grand Island or for the city of Kearney or for the city of North Platte. It will come from agriculture. And so we're going to have to reduce our current uses, and that's probably reducing irrigated acres if we ever meet the target flows. And so anything that detracts from water to the Platte reduces our opportunities to capture it and reuse it, it reduces the volumes available to capture and reuse to meet those target flows, and only increases the likelihood of us cutting back on irrigated agriculture in order to meet target flows. And those target flows that are 431,000 acre-feet short now does not include some of the pulse flows or scouring flows that Fish and Wildlife also indicates are important to those species. They're not needed very often but they are some of those flows that are

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involved in so-called we call them floods; they call them scouring flows, and they say they are important to those species, as well, and so that's a demand above and beyond the 430,000-some acre-feet of water that we're short. So I guess my testimony is we don't have any water to transfer. We're having quite a time coming up with water to do the things that we've agreed to, that the state of Nebraska has agreed to in the Platte River program and that we are obligated to do under the Ground Water Management Act and the fully appropriated designation and the overappropriated designation. If you talk about...some mention was made about flooding and the flooding at Grand Island. The flooding at Grand Island isn't available for some of the things that were described because the flooding at Grand Island this past few years has been at the north end because we resolved the flooding at the south end. Flooding is at the north end of Grand Island. That's part of the Moores Creek and Prairie Creek drainage system, and those flood waters go below Grand Island into Prairie Creek and don't join the Platte River until you're almost to Columbus. And so if you're talking about taking water to Elwood or any of the other reservoirs over there, you heard the testimony earlier, they do seep and recharge ground water but they recharge ground water to the Republican as well as the Platte. To the extent that those recharge to the Republican River is increased, that hurts the Platte River Basin by not having those flows available for use in the Platte to meet the instream flows or to meet the overappropriated designation that we've got. And so I guess my message to you is they shouldn't look to the Platte just as we shouldn't look to the Loup, because the Loup is within a day or so of water rights of being declared fully appropriated, and so if we were to look to the Loup for water to solve some of our Platte River program problems we'd only be creating a problem there, and if they were to look to the Niobrara they'd only be increasing the problems that the Niobrara has got. So our approach here in the Central Platte is that, yeah, we've got a problem in the Platte Basin, so we've taken steps to try to address those problems and try to resolve those problems, and we're starting a program. Hopefully the Environmental Trust grant that we've applied for will help move us along a little faster, but we've started a program that involves about \$45 million over the next three years in addressing the flow shortages in the Platte Basin. And the only reason that we've only

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looked three years is that's as long as an NET grant is good for. After three years you have to go back in and reapply. But if we are successful in getting that grant, that will kick off about a \$43 million effort in the Platte Basin from Columbus clear to the Wyoming and Colorado line in trying to move that overappropriated...well, first, trying to move us back to the '97 level, and then we would hope it would continue on after that and move us back to the fully appropriated area instead of overappropriated above Elm Creek. There was some comment about the other grant that was submitted, and I'd be glad to try to answer any questions you have on either of those grants or on our position here in the Central Platte. I do commend Senator Christensen for raising these questions because I think they are worthy of discussion. It's just that he's picked the wrong basin to get the water from, and I don't have any advice for him on where to look, because quite honestly, when you get west of Grand Island, probably west of Columbus, everything is pretty well-committed. You know, we've got the Niobrara has been declared fully appropriated; we've got the Loups on the edge of being fully appropriated; we've got the Platte overappropriated; and the Republican is fully appropriated. So we do have some problems. We've got to get them straightened out. And in the Platte, we're taking steps to do that, as are many of the NRDs in the other basins. And I'll stop there, Senator. If somebody has got a question or two. [LR330 LR331]

SENATOR LOUDEN: Okay. Questions for...? Senator Carlson. [LR330 LR331]

SENATOR CARLSON: Senator Louden. Yeah, Ron, just explain a little bit more about that grant and the makeup of the group that would administer it and help us out there, would you? [LR330 LR331]

RON BISHOP: The grant that's been referred to as maybe a form of a state water plan...is that the one you're talking about? That grant application came out of the Water Policy Task Force, and I don't look...personally, I don't look on it as a state water plan grant. It's a part...certainly would be a part of state water planning, but it was an effort to

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identify and to prioritize some of the water activities and projects that need to be done. And it was done partly for you folks so that the Legislature would have an outline of potential and proposed water activities across the state to get us out of some of the jams we're in, in some of the basins, and to also look at the basins that haven't been declared fully appropriated yet but to look at what some of the data needs, some of the study needs were in those areas, too. And so what's envisioned is hiring a consultant that would kind of wrap all of this stuff together. They would be working with the natural resource districts; they would be working with the public and power and irrigation districts; they would be working with the irrigation districts; they would be working with some of the municipalities across the state. But the effort would be to identify water needs, whether it was in the Republican Basin or the Platte Basin or the Elkhorn Basin, for that matter. Identify the water needs across there, and then set up a system where they're prioritized so that there would be, in effect, a list that said here's 20 projects that need to be done that have merit, and of these 20 projects this one should be the highest priority and these two should be the second and third priority, and on down the list. And then to submit that list, first, to the Water Policy Task Force and see that they concurred, and then submit it to a committee composed of the Chairman of the Natural Resource Committee and the Chairman of the Appropriations Committee and the Governor of the state of Nebraska, along with a representative from DNR and representatives from the natural resource districts supposedly representing the surface water and ground water management interests, and that group then would sit down and develop a final list to submit to the Legislature as recommended activities for the next year and for the next biennium. And that process would continue every other year, at least, then from then on, working through that list of 20 or 30 or 50 water projects, whatever might come out of that report. And so that would be, in effect, the action part of a state water plan if you want to look at it that way. When I drafted it or when we drafted it--and I had a lot of help from other folks--I didn't really look on it as a whole state water plan, but certainly that could be viewed as a component of a state water plan. It wouldn't cover things like policy activities. It wouldn't cover part of what I would look on as important parts of the state water plan but it would certainly be an important

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component that should be included in a water plan. [LR330 LR331]

SENATOR CARLSON: Okay. Thank you, Ron. And you and I working together on the Vegetation Task Force, so whenever there is an opportunity to bring something up there I want to do that, and we're really talking here about finding sources of water, in a sense, to take away from somebody. And this state plan, I know that the hopeful end result might be one that doesn't take any more water than necessary away from ground water irrigators and no more water than necessary away from surface water irrigators and no more water than necessary away from municipalities and rural residents for domestic use and no more water than absolutely possible to be taken away from industrial uses so that we can expand our economy. So I'm going to make a real bold statement here and since I--I've said this before--since I'm not a scientist I don't have to prove it all, but I want to sit down with you because I think that we can find 431,000 acre-feet to save out of about 15,000 acres of stream bed on the Platte River, and that would be pretty important in this endeavor. [LR330 LR331]

RON BISHOP: Yes, absolutely. Every drop is important, Senator. [LR330 LR331]

SENATOR CARLSON: So I won't say any more than that, but I want to sit down and talk to you about that, and we need to try to find those areas that we can all agree upon that we don't need, so let's get rid of those first. [LR330 LR331]

RON BISHOP: Rather than taking it away from ag or municipalities, let's take it away from the phragmites and the other invasive species. [LR330 LR331]

SENATOR CARLSON: Absolutely. [LR330 LR331]

RON BISHOP: Yes. And there is...I might add, Senator, there is an opportunity for Nebraska, I think, an opportunity for Nebraska to get some assistance on that by matching money through the Platte River Cooperative program. I think there's an

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opportunity there that's certainly worth pursuing that we could get some match money--now whether it would be 2:1 or 1:2 or 1:1, whatever--for expenditures in the Platte Basin through the Platte River Cooperative Agreement in conversations I've had with a number of the governance committee members and staff for the program. So hopefully Nebraska will be in a position to continue that 701 effort into the future, because I think we can use that as seed money to perhaps draw some match through the program. [LR330 LR331]

SENATOR CARLSON: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Christensen. [LR330 LR331]

SENATOR CHRISTENSEN: Thank you, Chairman Louden. Ron, thank you. Since you're talking vegetation I'll start with that question first. You talked about scouring flows and water that needs to be used for that. Have you ever seen scouring flows work with vegetation growing in the stream, especially with the trees and phragmites, things this way? [LR330 LR331]

RON BISHOP: We have seen it in the past. I'm not sure... [LR330 LR331]

SENATOR CHRISTENSEN: Back before we had the big trees and things in the river, though probably, correct? [LR330 LR331]

RON BISHOP: Yes. We used to have a condition on the Platte River where in the spring we'd have scouring flows, and then in the summer the river would dry up--not every year but often, as John can relate to. I can remember dry years back in the '50s and back in the '70s and then during this recent drought, there were years back in the '30s where the Platte River recorded no flow at Grand Island for something like 234 days one year. And so that cycle of the snow melt coming down through, before McConaughy certainly, coming down through and doing some scouring and then drying up in the summer, did a

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better job of management for trees and brush and cover that kept the river relatively open. We've seen some changes now, and scouring flows, it depends upon what size they are, the magnitude, when they come. A lot of times ice with a higher flow is as effective as more water would be in the summertime. So they're not always...they're certainly not always effective. We've seen some attempts at trying to get some flushing flows and have seen some flows where they raised up and they maybe did a little work on one island but they deposited more sediment on another, and it just tended to raise the island and cause a better seedbed for trees coming on. So I think there's a lot of work that still needs to be done in that area as to whether or not they're effective. But whether or not they're effective, the U.S. Fish and Wildlife Service, through their power with the Endangered Species Act, has declared that those flushing flows are important. [LR330 LR331]

SENATOR CHRISTENSEN: How do we get evidence to show the U.S. Fish and Wildlife how unproductive their scouring flows are at present time because of the vegetation and stuff we have in the river? Scouring is not possible at this point in time. We have seen where we've come in and removed the trees and then we come in with the mechanical working of the islands, then we get scouring; then it's working. But how do we get...? Because right now it is a waste of water to dump water down the stream with all the vegetation in there now. It's absolutely a waste of water. [LR330 LR331]

RON BISHOP: As you may or may not know, the Central Platte was an opponent of the state joining into that Platte River Cooperative Agreement. We opposed it. But now that we've got it, if there is an advantage from that program it's the opportunity to review and observe some of the activities that are being proposed. There will be a 13-year period in this first increment where there will be studies done to identify how effective scouring is or how effective different flows are. There will be an opportunity to observe the effectiveness of some of the things that are proposed to be implemented as part of that Platte River program. It will be a program where things are tried and you look at them and then you evaluate them. You gather information and then you evaluate them before

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you go on to do more of it or to do other things, and so the program is going to be adjusted as it goes on and there's going to be a lot of information gathered. Part of it will be on scouring flows in this first increment. So I would say that if there is one good thing about the Platte River program and this first increment is that it will give us an opportunity to learn how effective some of the proposals are. [LR330 LR331]

SENATOR CHRISTENSEN: Another question I had was back on you saying there is no excess water and we need all the flows, and you mentioned the floods of the '80s. So am I understanding you right, it don't matter when the flows come and how much magnitude, we've just got to have 431,000 extra feet of water? [LR330 LR331]

RON BISHOP: That's what the U.S. Fish and Wildlife says is necessary to get the target flows...or to get the current flows up to target flow levels--431,000. And what I was saying was that there's not 431,000 out there even if you count the floods. And there's no question, we can't capture a flood of 4 million acre-feet coming down the river in one year when the normal flow is 1 million acre-feet. Some of those flows, those flood flows coming down, the only way you can capture them is if we had another major reservoir on the Platte River. And realistically, I don't see that happening because I don't think we can afford it, because in the 40 years I've been in Grand Island that happened just two years out of those 40 and it was back-to-back years. You can't justify millions and millions of dollars of expenditure to catch a flow that's only going to be there, you know, one year out of 40 or one year out of 100 or whatever it might turn out to be. [LR330 LR331]

SENATOR CHRISTENSEN: So basically, according to what U.S. Fish and Wildlife is asking here--and you may not want to answer this but I'd love to have it on the record--basically U.S. Fish and Wildlife don't care how much we damage, how much people we hurt, we just got to have flows in this river that are destructive, because we know we're not going to have uniform flows year-round because of weather cycles. So basically increasing 431,000 foot, we're basically saying U.S. Fish and Wildlife wants

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damage in Nebraska on the rivers, because that's what's going to occur. With the plugged channels, with the increased flows they're wanting, they're basically saying we want to damage homes, we want to damage roads, we want to damage people in the state of Nebraska. [LR330 LR331]

RON BISHOP: That's not what they're saying and that's not what they're hoping... [LR330 LR331]

SENATOR CHRISTENSEN: That's what they're going to get. [LR330 LR331]

RON BISHOP: ...but they may well be what the end result is, yes. [LR330 LR331]

SENATOR CHRISTENSEN: Reality and the perfect world...perfect world is, yeah, 431,000 acre-feet of increase, take a little each day, it's very achievable. On paper it looks good. Practicality is to do this you're basically just going to have a lot of damage. [LR330 LR331]

RON BISHOP: Well, their largest even scouring flow is just bank-to-bank to the top of the bank, and so that's what they're asking for. They're asking for up to 2,500 cfs going down the river during certain times, smaller amounts at other times, and then scouring flows of up to bank-full, preferably once a year. So to...that's what they're asking for. The end result may well be additional damage, because you can't...if the water is within an inch or two or being over-bank flow, you can't tell when the next rain is going to be, and so if you protect that you may well end up causing some damages just because of nature. [LR330 LR331]

SENATOR CHRISTENSEN: And as we visited about the vegetation, practicality is the streams can't hold it so we're going to have damage just trying to get what they want. [LR330 LR331]

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RON BISHOP: One of the first problems that the cooperative agreement faced was getting the flows released out of the environmental account and down the North Platte River by North Platte because of the chock point that they had there, and that was primarily phragmites. And if you haven't seen that, that...(laugh)...that's a mess. You can't walk through there. [LR330 LR331]

SENATOR CHRISTENSEN: That's right. [LR330 LR331]

RON BISHOP: You can't get an animal through there it is so thick. And the problem is, that's heading downstream. That just keeps spreading. We've got something like 4,000 acres in our natural resource district of phragmites that are choking things off. So it's only going to get worse, and thank goodness, we've got an effort through the Legislature to start to take a look at what might be done to get that under control. But it is a major impediment to moving water and we think it's a major impediment to water consumption too. [LR330 LR331]

SENATOR CHRISTENSEN: Oh, definitely it is. Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. Thank you, Ron. I just have a couple short questions and a couple short comments. Hopefully, you're respond with short answers...(laughter)...not that I don't appreciate all of your information, but I know we have another resolution coming up. [LR330 LR331]

RON BISHOP: (Laugh) I know. [LR330 LR331]

SENATOR FISCHER: When Mr. Drain was speaking earlier in regards to return flows, he made the comment that the Platte doesn't go dry as much as it used to. You made the comment, at one point in time--I didn't get the year--that for 231 days the Platte was

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dry here at Grand Island, yet we're required for the 431,000 acre-feet. Was any of that taken into consideration when these target flows were set? [LR330 LR331]

RON BISHOP: No, the...yes, Fish and Wildlife Service set the target flows based upon their studies of the deeds for the threatened and endangered species, primarily terns and plovers and whooping cranes. [LR330 LR331]

SENATOR FISCHER: But if the Platte had been dry in the past, wouldn't that have some impact on current habitat needs? [LR330 LR331]

RON BISHOP: One would reasonably think so, but it does not. [LR330 LR331]

SENATOR FISCHER: You mentioned that studies will take place over the next 13 years and that we are currently seeing in phase one of this agreement. Who is going to be doing these studies? [LR330 LR331]

RON BISHOP: A lot of those studies, they'll hire folks to come in and carry out... [LR330 LR331]

SENATOR FISCHER: Who will hire? [LR330 LR331]

RON BISHOP: The Platte River...the governance committee. [LR330 LR331]

SENATOR FISCHER: And who is on that governance committee, do you know? [LR330 LR331]

RON BISHOP: Yeah. I am on it. [LR330 LR331]

SENATOR FISCHER: Good. Who else? [LR330 LR331]

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RON BISHOP: Kent Miller is on that. [LR330 LR331]

SENATOR FISCHER: Well, not so good then...no, that's good. (Laughter) [LR330 LR331]

RON BISHOP: Brian Barels and Don Kraus. [LR330 LR331]

SENATOR FISCHER: Are they state people, for the most part, or do we have federal people on it too? That's what I'm trying to get at. [LR330 LR331]

RON BISHOP: There are state people. The Department of Natural Resources is one of the primary members representing the state of Nebraska. [LR330 LR331]

SENATOR FISCHER: Do you anticipate that these studies will look at what's happened in the past? And, you know, we look at maps on the walls of a number of NRDs and see where ground water levels were predevelopment, where they are currently. Are you going to take any of that into consideration, even ground water levels, when you look at the flows of the river? [LR330 LR331]

RON BISHOP: Probably the studies conducted by that group will be more associated with the effectiveness of scour flows, the effectiveness of... [LR330 LR331]

SENATOR FISCHER: But you already answered that for us. [LR330 LR331]

RON BISHOP: ...of man-made islands. They'll still look at it more and gather information on it for 13 years. [LR330 LR331]

SENATOR FISCHER: How is that going to be paid for? [LR330 LR331]

RON BISHOP: It's paid for by the three states and by the federal government. The

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federal government pays for half of it. Nebraska pays for 40 percent of the other half. Colorado pays for 40 percent of the other half and I think Wyoming at 20 percent, I believe that's the ratio. Nebraska's input is going to be primarily in-kind input and not cash, because of the tremendous benefit there is to giving U.S. Fish and Wildlife Service control over 100,000 acre-feet of storage in McConaughy and letting them make the call when it's released. And, in fact, there are times when it can be more than 100,000 acre-feet if they build it up from year to year. [LR330 LR331]

SENATOR FISCHER: You also made the comment we have problems and we need to get them figured out. Depending on the person's perspective who heard you say that comment, problems can be defined in different ways on water issues. Were you referring to compacts that we're in as being problems, dealing with endangered species as being problems, those darn irrigators, you know, are they the problem? Is it the public perception which doesn't always follow science, is that the problem? What was your definition of... [LR330 LR331]

RON BISHOP: I could pick two or three out of there that I would agree with. [LR330 LR331]

SENATOR FISCHER: No, no, not all of the above. We don't want...the irrigators aren't the problem, so...(laughter)...so what do you define as the problem? [LR330 LR331]

RON BISHOP: The Endangered Species Act we look on as a problem, because we look at those target flows as being above and beyond what is necessary. [LR330 LR331]

SENATOR FISCHER: Unrealistic perhaps? [LR330 LR331]

RON BISHOP: Yes. So the threatened and endangered species...the Endangered Species Act we look on as a problem that is carried over into this Platte River Cooperative Agreement that we've signed on to, at least for the first increment, and

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hopefully those of you who are going to be around in 13 years will not let the second increment ever see the light of day. But that's a problem. And the fact that we are out of balance in some areas of the basin, we are, in effect, overappropriated in some areas of the natural resource district and it's starting to impact, not only in drought years but in more normal years, some of our water rights. That is a problem that we need to address. [LR330 LR331]

SENATOR FISCHER: So with these problems, you have stated that the resolution we're looking at today really cannot be addressed. [LR330 LR331]

RON BISHOP: Yes. Yes, I am. [LR330 LR331]

SENATOR FISCHER: Thank you. [LR330 LR331]

RON BISHOP: That's short. [LR330 LR331]

SENATOR FISCHER: Thank you. [LR330 LR331]

SENATOR LOUDEN: Well, Ron, seeing no other questions, thank you for your testimony. [LR330 LR331]

RON BISHOP: Thank you very much. [LR330 LR331]

SENATOR LOUDEN: Next testifier. How many more do we have on this LR? One more. Okay, good enough. [LR330 LR331]

BRIAN BARELS: (Exhibits 4 and 4) Good morning, Senator Louden, members of the committee. My name is Brian Barels and I'm the water resources manager for Nebraska Public Power District. That's B-r-i-a-n B-a-r-e-l-s. I was going to provide some comments on LR330 and LR331 this morning, and maybe I can provide some additional

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information. I know Senator Christensen mentioned Sutherland Reservoir. Rather than reading the testimony of which you'll have copies of, I'm going to try to hit the highlights because many of the points have already been made regarding water in the Platte or the Platte River program, fully and overappropriated, the Endangered Species Act requirements, three states' agreements. And I would just like to say I appreciate the committee's time and effort and interest to understand better all the issues that those of us that deal with water in the state tackle on a regular basis. What I would like to touch on just briefly is the state water plan, and I'd like to start by commending the NARD and others that have put that plan together...or that suggestion to get the grant for the state water plan, because until we know what our supplies are, until we know what our water demands are for our existing needs, and until we identify in each basin of the state what our future needs might be, it's going to be very hard to convince the constituents in one basin of the state to allow their water to go to another basin of the state. But if we can get a state water plan put together, it will start allowing those questions and potential excesses to be identified and some uniformity on how we best use those excesses that might be identified, and I think the state can come together then and find ways to support those type of activities. I would urge this committee to try to find some money to help that process, if you could, from a legislative perspective. A question was asked about how much time it might take to put that plan together. The time involved is the resources--the people--and collecting the data, bringing people together then to identify what future needs might be and maybe to address some tough policy-type questions. That can be done more timely with more people or more consultants or different approaches like that. I don't know how much money has been asked for, how much money might be available for. As Mr. Bishop said, the Water Policy Task Force had a subcommittee that looked at this and there's probably some numbers and estimates that might be available, but I would really urge this committee to support moving forward to get that state water plan developed. I might just touch also on what we might do in the meantime. There are a number of things out there that we can be looking at for water-short areas. One of those things might be the reduction in nonbeneficial uses in favor of beneficial uses. I believe Senator Christensen, in his opening statement, made

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note of the fact that there's something like 90 million acre-feet involved in the water supply in Nebraska. About 82 million acre-feet, or if you do the math about 90 percent of it, is consumed on existing vegetation, land use, growing on lands in Nebraska as well as the rivers in Nebraska. It's natural. It's desirable. Only 5-10 percent of the water consumed in the state is for irrigation. To think that we can take irrigation at 5 and 10 percent and solve all our problems, is not going to get us there I don't believe. I think that 82 million acre-feet or 90 percent that's going to other, what some may call nonbeneficial uses may be someone other's beneficial use, but I think those are the things we have to look at. Can we reduce consumption on other lands and provide water for other uses? Those opportunities are out there. They take money, they take time to study them. But I think that's an area that we need to look for, for times of excesses in addition to storing high-pulse flows that might go down the river and cause flooding. I think, too, another thing we need to keep in mind is our ground water reservoir. There's estimates out there that the Ogallala Aquifer in Nebraska contains 2 billion acre-feet of water. I think we need to give serious consideration to pumping water from that reservoir when we need it, and recharging it through conjunctive management projects when we have excess water and flows in our surface water system. We have a large underground reservoir. Unfortunately, they are connected to the rivers. But if you use your surface water supply, increase that ground water recharge in time of excess, I think we can pump that reservoir in times of shortages to help in certain parts of the state, all again to be benefitted from a state water plan. We talk about the fact that the flood flows exist and where do those flows exist at. We did have a potential flood, as Senator Christensen mentioned, in Ashland this summer. I did follow those high-flow events as they occurred. Unfortunately, they occurred below Lake McConaughy; they occurred below Sutherland Reservoir and, to a large degree, Elwood and Johnson. I think the flows peaked between Kearney and Grand Island at about 10,000 cubic feet per second. They peaked at Ashland at 100,000 cubic feet per second...or excuse me, Louisville--I was thinking of a dam at Ashland that had been mentioned a couple of years ago. So a large part of that water does occur as you go further east in the state from Grand Island, and those are probably opportunities somewhat that need to be

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looked at. NPPD does operate the Sutherland project system, the Sutherland Reservoir. It has about 3,000 acre-feet of surface area near Sutherland, Nebraska. It has water supplies capable from the North Platte River system at Keystone. Lake Ogallala is formed by the Keystone Diversion Dam that takes water to the Sutherland Reservoir in our system. We also have a diversion on the South Platte River at Korty, Nebraska, and unfortunately in the past half a dozen years we have more vegetation growing in that canal than you do on any rivers in the state because there is no water in the South Platte River except for a rare rainfall event. But those are still opportunities, whether they be the Perkins Canal water. Sutherland Reservoir is an opportunity, but when it comes to water and solutions, they're not always cheap. Sutherland Reservoir holds about one-third of the water that it was designed to hold because it seeps, and it seeps to the point that there's concerns about dam safety and also high ground water levels between the reservoir and the Platte River system. But I think...we are in the process of developing an extensive model of the Sutherland Reservoir system. Some of you may be familiar, because of the drought we did install 28 commercial-sized wells to help maintain the elevation of Sutherland Reservoir, so we have a conjunctive management process that we have developed whereby surface water seepage provides water for those wells which can be put back in the reservoir to maintain the operation. That's a conjunctive management project that we can look at not only in that location, but in other parts of the state as well. We are also developing an extensive ground water model of that area. A former employee of NPPD that actually was hired to work on the COHYST study is now working on graduate studies in Colorado under some of the nation's leading modelers in developing a site-specific model. Maybe Sutherland Reservoir plays a role for some of these answers. Can we use Perkins water in the Sutherland Reservoir? Can we find other water to put in the Sutherland Reservoir? Should we stop some of the seepage by lining the reservoir? All those things we see as potential opportunities but we've got to get the data and information to be able to make the appropriate and right decisions. I would also just touch base briefly on the Platte River and excess flows. We do have an existing state statute that allows reservoirs that are in place to take excess flows when they're available, already. The question I think is

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asked, is there something that we can do? Well, if you can identify that point of excess flows, reservoirs can take those flows now. Some of what we're dealing with is what's defined as excess with consideration of instream flows. I would suggest that occasionally that does occur; less frequently in droughts that we've experienced for the last eight years. So the statute does exist for excess water to go into reservoirs, and I would suggest another alternative might be that the parties sit down together, probably with the Department of Natural Resources' leadership; of course, with Central, because they are their facilities; other interests groups, being those that hold the instream flows, like the Game and Parks Commission, Central Platte NRD. It's possible that you may make a plan where you can identify certain conditions and certain timing that would allow the decisions to be made in a very timely manner once flows showed up at a certain location the river. And if all the parties got together and discussed that and to kind of put a future-looking plan together on how to manage what might be determined to be excess flows, I think those diversions into Elwood Reservoir, Johnson, or other reservoirs in the state, could occur in a very timely manner. So I won't take anymore of your time, but I'd be glad to answer any questions that the committee might have.

[LR330 LR331]

SENATOR LOUDEN: Questions for Brian? Senator Wightman. [LR330 LR331]

SENATOR WIGHTMAN: Thank you, Senator Louden. Brian, I'm interested because I remember a series of articles in the World-Herald last...I think it was last winter sometime, talking about agriculture using something like 96 percent of the state's water. I may be wrong on that figure and maybe it was surface water instead of overall water. You stated that only 5 percent to 10 percent of water is used for irrigation purposes, I think. [LR330 LR331]

BRIAN BARELS: Yes. When you look at the total water budget for the state and the 90 million acre-feet that are in the state, while agriculture does use a larger percentage of the water use in the state, it's a small percentage of the overall water supply--the 90

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million. That's the difference between the two. One is, of the water that's used...and a lot of times when we look at consumption and evaporation by vegetation in pastures or by timbered areas or by wetlands, we don't consider that necessarily a water use, but that is the consumption that uses 82 of that 90 million acre-feet in Nebraska. Now if you look at how much water is used in Nebraska, that is probably--well, I should know the number too--probably down in the 3-4 million acre-feet range. It's a smaller number, by far; substantially smaller. And of that smaller number, 90 percent is used by agriculture--or by irrigation. [LR330 LR331]

SENATOR WIGHTMAN: Okay. On the 431,000 acre-feet that we're short on, on flows--and I think Ron Bishop mentioned that that varied a great deal from year to year--I don't know, in the past year have we even had a shortage, or the past two years, since we have had fairly substantial rain? [LR330 LR331]

BRIAN BARELS: Have we had shortage to that 431,000 acre-feet? [LR330 LR331]

SENATOR WIGHTMAN: Right. [LR330 LR331]

BRIAN BARELS: I haven't done an analysis of it but I think the answer is almost certainly yes, because the target flows that the Fish and Wildlife Service identified relate to summer flows for insects and fish, for terns and plovers it relates to spring and fall flows, for whooping cranes and it relates to some winter flows as well from a maintenance perspective. And I know those have been shorted. The Fish and Wildlife Service has released water from the environmental count in Lake McConaughy to help make up that shortage during the summer. I don't know exactly how many acre-feet they released from their account in Lake McConaughy but it has been done. The 431,000 acre-feet would probably be the best-case situation. That is the number it takes to get and meet flows during dry periods, normal periods, and wet. The service has target flows for all three kinds of conditions, and to meet all those types of conditions it would take, on average, that amount of water. [LR330 LR331]

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SENATOR WIGHTMAN: Thank you. [LR330 LR331]

SENATOR LOUDEN: Senator Fischer. [LR330 LR331]

SENATOR FISCHER: Thank you, Chairman Louden. Brian, can you tell me, has a study ever been done that looks at man's interference with nature in cases such as the Platte River naturally has been dry for periods in the past before man ever got involved with it, and now we're looking at having it flow year-round? Has there ever been a study made on what man's influence is doing in regard to nature? [LR330 LR331]

BRIAN BARELS: That question has been looked at from a number of difference perspectives. Studies have been done by the Fish and Wildlife Service, by universities, by USGS. The districts did a fair amount of that study as part of our relicensing of our hydro projects back in the '80s, and we did document extensively the number of zero-flow days at Grand Island that Mr. Bishop talked about, and we developed the graphs to show that. Others have done studies that they believe shows that with the installation of reservoirs in Colorado, Wyoming, and Nebraska, that those peak flows or those habitat-forming environmental flows have disappeared. And while we have more summer flows and less zero-flow days, that's not always good from the historical and natural perspective. And so there's a variety of opinions on how best to manage the water. The service chose to take a look at the endangered and threatened species, and said, what would it take to provide the optimum flows for those endangered species? And that's how you get to the shortages that have been identified. [LR330 LR331]

SENATOR FISCHER: Were those endangered species always in the Platte River, or are there new species that have entered into some of these river systems because of management and conservation practices that have taken place? [LR330 LR331]

BRIAN BARELS: I think that there's a fair amount of information that's unknown, but I

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think also your suggestion that changes have taken place, I don't remember specifically whether it's terns and plovers, or both, but some of the earliest documentation in the Central Platte River anyway, for those species, occurs in the '40s to my recollection. I think you'll find documentation in the Lower Platte River probably substantially earlier than that period of record. Do you look at, for example, least terns and piping plovers, when you come to a river system like the Platte that can be drier in the summer, that is highly affected by rainfall events where the flows increase substantially in that river, it's not every year conducive for terns and plovers to be successful in those habitats. They also use, across the country if you look, shorelines. The drought in the Missouri River Basin has caused those birds to use extensively those reservoirs in South Dakota, North Dakota, and Montana, and have been very successful doing it. Lake McConaughy has been very successful with its exposed shorelines in raising least terns and piping plovers, and my guess is, past over the history when the Sandhills of Nebraska were less vegetated, they were very successful sites for those species, as well. [LR330 LR331]

SENATOR FISCHER: Don't say that. (Laughter) I asked Mr. Bishop about the study that's going to be taking place and who was involved in this study, and he mentioned himself and DNR and...are you involved in this study that's going to be taking place? [LR330 LR331]

BRIAN BARELS: Is this the state water plan-type study? [LR330 LR331]

SENATOR FISCHER: No. This is for the cooperative agreement. [LR330 LR331]

BRIAN BARELS: Oh. Yes, the various scientific studies. Now, there will be both ongoing studies and there will be management on endangered... [LR330 LR331]

SENATOR FISCHER: Since we're on endangered species, that's why I brought that up. [LR330 LR331]

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BRIAN BARELS: Yes. We've been...because again of our relicensing, heavily involved in understanding how the... [LR330 LR331]

SENATOR FISCHER: How many people from Nebraska or entities from Nebraska are going to serve on this group? It's a three-state group, plus the feds? [LR330 LR331]

BRIAN BARELS: I would say that either on the governance committee of the Platte River or the water committee or the land committee, there will be representatives from most all of the NRDs participating in one way or another. There will also be landowner representatives participating in the land committee, and there will be others participating in the water committee. So there's quite a number. I don't know if...20-30 or more. [LR330 LR331]

SENATOR FISCHER: Is this equal representation from all the states that have been... [LR330 LR331]

BRIAN BARELS: Pretty much. The Platte River program is an open process, and meetings are scheduled and any interested person can more or less come and participate. As far as the studies, the monitoring and the research that's going to go on, there are committees looking at that, and on those committees are representatives of NPPD and Central, the natural resource districts, the state of Nebraska. They are very much involved. And the Platte River program was a coming together of the three states and the water users more or less to agree to disagree, and those studies and research will evaluate both the Fish and Wildlife Services' beliefs on how the Platte River should be managed to benefit the species and those other ideas that may have been brought forth by water users, whether they be a mechanical or chemical control of vegetation, use of sand pits versus the rivers for terns and plovers. Those are the different theories that will be tested during that 13-year period Mr. Bishop was talking about. [LR330 LR331]

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SENATOR FISCHER: I've been interested in monitoring some studies that are taking place in another basin. My next question, I guess is my perception of what's happening there, but who's going to hire the researchers? [LR330 LR331]

BRIAN BARELS: Who will hire the researchers in the Platte River Basin? That money is budgeted within those dollars that Mr. Bishop talked about. [LR330 LR331]

SENATOR FISCHER: But who makes the decision on which researchers are going to be doing the studies, because that...we'd like to think it's not biased, but... [LR330 LR331]

BRIAN BARELS: The ultimate decision is made by the governance committee, but there are technical-level committees, of which Nebraskans are heavily involved in, that will review those proposals by the consultants or entities, and make recommendations on up the system. So it's a very open process, with large involvements by people from Nebraska, Wyoming, and Colorado, as well as the federal government. [LR330 LR331]

SENATOR FISCHER: Okay. Thank you. [LR330 LR331]

SENATOR LOUDEN: Brian, you mentioned pumping from some of these reservoirs and a time when you were needing water, and you mentioned the Ogallala Aquifer, and of course that's kind of where I live. What if whenever you have to pump from that, that's going to be because it's dry every place else, probably, or else if you have plenty of water you won't be pumping. That isn't hard to figure that out. So my question is, has there been any consideration or studying done that if you drop the water level out there in some of those Sandhill areas, a foot or so, what effect does that have on those wet meadows on the whole area? I mean, how many lakes will you dry up by trying to put water with a pump someplace else? [LR330 LR331]

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BRIAN BARELS: I don't believe those studies have been completed yet. I think we all know that the natural resource districts monitor ground water levels. We also monitor precipitation. I think we have some initial data on what kind of recharge occurs. Those are all information you have to know before you make the decision of whether you can pump that ground water aquifer or not. But maybe what we do is we find an area within the aquifer that's low for whatever reason; if there are high surface water flows, could they be diverted to small recharge areas that would actually put water back in the aquifer? And when you use that water to put back in the aquifer, you could pump it out later in times of shortages. [LR330 LR331]

SENATOR LOUDEN: Are you talking about putting... [LR330 LR331]

BRIAN BARELS: Whether it's a shortage of surface water or a shortage of ground water, you don't go into a shortage area and try to take more out of it. You've got to find the excesses, again whether it's surface water or ground water, and I think we can do a lot to manage those resources together to provide water in times of shortages. But we are going to need additional data and research to get to that level of understanding and "comfortableness." At the present time, not to belabor it, but there is a conjunctive management study going on between Ron Bishop's entity, our entity, the Department of Natural Resources, to look at within the irrigated area that we provide surface water to--and there's also many ground water wells--are there opportunities to manage those two resources to provide additional water for other beneficial purposes? [LR330 LR331]

SENATOR LOUDEN: Now you're talking about this mound down in this, or are you talking about the Ogallala Aquifer up in the Sandhills? [LR330 LR331]

BRIAN BARELS: I'm talking about the Central Platte River Basin within the Central Platte Natural Resource District in the Dawson County area where we have both surface water irrigation canals and ground water use going on, and we're using part of the Ogallala Aquifer... [LR330 LR331]

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SENATOR LOUDEN: Then we're getting back to the amount of seepage that's coming out of your canals. You're trying to recycle that seepage water is what it amounts to. [LR330 LR331]

BRIAN BARELS: Yeah. How do we use that to a benefit both for surface water users and ground water uses. Use the surface water in times of excess for irrigation and ground water recharge, and the use the aquifer in times of shortage to make up the differences. [LR330 LR331]

SENATOR LOUDEN: Because anyway when you talk about pumping the Ogallala Aquifer, and you look like a young man but about 35 years ago there was a plan to put in a coal-fired generation plant up there at Hemingford and go over into the Sandhills there and drill wells and pump water out of there to service that coal-fired generation plant. And it nearly caused a civil war up there because there was a huge amount of water going to have to be pumped across. And that's what I was wondering, if you were digging those old bones up or not? [LR330 LR331]

BRIAN BARELS: No, not at all. I just think it's the conjunctive use of surface water and ground water. As I started out in my comments, unfortunately the good Lord hooked the rivers to the top of the aquifer and not the bottom of the aquifer. And when we pump ground water down, it does affect stream flow. Unfortunately, we've seen that in many different situations. But how can we take that surface water in time of excess, put it into that sponge into that aquifer where there might be voids, and then have it available to use at some time in the future. [LR330 LR331]

SENATOR LOUDEN: Well, good luck. Other questions for Brian? Thank you for your testimony, Brian. Thank you for coming. Is that the last testifier for LR330 and LR331? If so, do you want to close on that and start on LR332, Senator Christensen? [LR330 LR331]

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SENATOR CHRISTENSEN: I'll just open on the next one. [LR330 LR331]

SENATOR LOUDEN: Good enough. We'll go from there, then. [LR330 LR331]

SENATOR CHRISTENSEN: Mark Christensen, M-a-r-k C-h-r-i-s-t-e-n-s-e-n. LR332 is just a study I thought would be interesting to look at the impacts of taking storm water runoff, because it comes in times of surplus--there's no runoff from cities when there isn't surplus--to help, whether it be the Republican or any other district--probably an oversight on mine not necessarily just looking to one district--but again as a use of state water in a better use. And I think if I've learned anything out of the interim study so far is people probably are very much in favor of having an assessment of the water system statewide. But, you know, I just got to looking and figured up the square miles or square acres of Lincoln, and I took, one day, a little calculation of the annual rainfall and how many acre-feet that would be. And that more than exceeds any shortage of the Republican River district. You could go to quite a little smaller town and exceed the shortages. And that's what spurred this particular interim study was the fact that, you know, people say you can't move water uphill. Anybody that's ever used the ground water well, irrigation wells moved water uphill. Or a use pit. The water is on the bottom end of the field and they move it uphill. Water can be moved uphill at any point in time you want. It comes down to the feasibility of it. And the value of water and things this way, that's the reason that I've talked to some different people. I had talked to an engineer here from Grand Island who wasn't able to come, but it was interesting just visiting with him and different ones on the amount of water and the times of it. And in better understanding, the two previous studies of the amount of water in, and it really doesn't matter in the Platte because the Platte people are U.S. Fish and Wildlife--I'll pick on them--they don't care how much damage we have or who we hurt; just have flows to kill the birds because that's basically what you'll do. You will kill the endangered species' excess flows too, and them birds survived for a long time when the river went dry. And I'm going to ask for one of them charts of the flows of the Platte River when it's been

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dry. But this study here again, just looking at runoff of cities, is the only times of surplus, is there ways of utilizing that, whether it's for the Republican or other districts, is there any input from people, the benefit of utilizing city runoff. Thank you. [LR332]

SENATOR LOUDEN: Questions for Senator Christensen. Senator Wallman. [LR332]

SENATOR WALLMAN: Thank you, Chairman Louden. Thank you for bringing this up, Senator Christensen. I was in a country where I was in a water minister's office, and this was in a major city, and they do this. They save their grey water, they call it, and water quality. It never hits the river. They had what they called catchments, and they put it in there and they pump it in the aquifer--and pressure. And...but they have...they clean it up, you know, kind of like a sewage...but they don't dump sewage in there but they call it grey water, and it's increased their aquifer because they've been in extreme drought, and so they need...and when that water comes back out of that aquifer it's good. So it's possible. Lincoln and Omaha, Grand Island, we could put a lot of water back into our aquifer. [LR332]

SENATOR CHRISTENSEN: That's right. [LR332]

SENATOR WALLMAN: Instead of running in the river. It's going to cost money. Thank you. [LR332]

SENATOR LOUDEN: Other questions? I have one, Mark. Where does Holdrege drain their storm water? [LR332]

SENATOR CHRISTENSEN: Well, Holdrege sets in the Republican River district, but it's pretty much flat enough it doesn't...right now, if you look right south of town that's where their storm water goes. I'd say that's where it all goes. There are wet lands right on the south edge of town, south of the railroad tracks. [LR332]

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SENATOR LOUDEN: The only way it gets to the river then is through seepage or something like that. [LR332]

SENATOR CHRISTENSEN: Yeah. I don't know of anywhere it would connect to a stream to go. [LR332]

SENATOR LOUDEN: And it would be how far to the Republican River from Holdrege? [LR332]

SENATOR CHRISTENSEN: Well, you're talking 30 miles to get to Alma, which if you was going to hit the lake or the stream, but there's...you wouldn't have...any time you're looking at something like that you never have to go the full distance. You can always find another stream at some point in time if you ever wanted to go to. But in that particular example you'd have to look at what wetlands can be touched and can't be touched, because that's literally a wetland where their water runs to. [LR332]

SENATOR LOUDEN: And that's in that Lower Republican? [LR332]

SENATOR CHRISTENSEN: Yes. [LR332]

SENATOR LOUDEN: I was just curious, since you penciled out how much there was, I was wondering if you figured out how much storm water runoff there was in Holdrege, and that's in the Lower Republican NRD if anybody has pursued that further. [LR332]

SENATOR CHRISTENSEN: The reason I didn't look at it is it's not a new water source to that, to the Republican River district. Now you might be able a little better utilize it than letting it set there and evaporate and some go down into the ground water. But you're sitting in a very heavy soil-type area there. The recharge is going to be slower than it would be in areas. [LR332]

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SENATOR LOUDEN: Okay. Other questions for Mark? Seeing none, thank you, Mark, for the presentation. Testifiers for this LR, LR332. [LR332]

SENATOR CHRISTENSEN: I figured it would be short and sweet. [LR332]

SENATOR LOUDEN: They don't want to touch it with a 10-foot pole. (Laughter) Do you want to close? [LR332]

SENATOR CHRISTENSEN: No. [LR332]

SENATOR LOUDEN: Senator Christensen waives closing on LR332 and I guess that ends our hearings for today on LR330, LR331, LR332, and I want to thank you all for being here and for your attention to these today. We appreciate your attention. Thank you. [LR332]