

1st DAY OF
6

Jan. 31, 1952
10:00 a.m.

Bear River Compact Commission
Governor's Board Room.

MR. LARSON - suggested Article V be considered, Article IV is being mimeographed and will be here in a short time. Asked Mr. Vernon to read the Article.

Mr. Vernon read Article V, the draft of January 25, 1952.

MR. VERNON:

Mr. Chairman - At the meeting of the Drafting Committee held yesterday, some consideration was also given to an alternate Article V, which was prepared by Mr. Iorns that was before the Drafting Committee when it broke up last evening. That is, Article V as it appears in the January 25 draft, and the alternate as prepared by Mr. Iorns. If agreeable, I will read the alternate Article V.

Mr. Vernon read the Alternate Article V.

Mr. Larson asked the group how it wished to proceed to discuss.

It was suggested that wording similar to that in the draft of January 25 - existing rights to store water in reservoirs above Bear Lake constructed prior to January 31, 1951, in the amount of 14,000 acre feet are recognized and confirmed.

MR. BISHOP: I have one better than that:- Rights of priorities earlier than the date of the signing of this compact for storage in the Upper Division as of the date of the signing of this Compact are hereby recognized and confirmed. Then I would like to say, - the combined total shall not exceed 150,000 acre feet annually.

When the Bear Lake water is used for irrigation as well as for power. You cannot sever the two.

All I object to is the water that goes through the turbines that is not used for irrigation. It could be well moved up stream.

MR. MERRILL: That was not the understanding that I got from the Engineers' reports - that there was no water for storage up stream without taking the water from the existing rights. Furthermore in the report it states this, the maximum storage allowable from Bear Lake source is varied from a net loss of 6700 acre feet to a net supply of acre feet or a 25-year average of 63,000. Now where are you going to get 150,000 out of that?

MR. BISHOP: We want enough to supplement all those rights including those rights in Idaho.

MR. TRACY: Mr. Iorns, you haven't had time to compile the amount of water going into the Central Division and the Upper Division, irrigated acreage of each?

MR. IORNS: No, I have not. In general, the diversions appear to occur during 1944-47 - there was more diverted in the Upper Basin than in the Lower Basin.

MR. TRACY: But the amount of water being diverted now, you would say in the Upper Basin is about as much as in the Lower Basin?

MR. IORNS: In good years it is more in the Upper Basin than in the Lower Basin.

MR. PERSONS: On Smith's Fork it is true, but not true in the Upper Wyoming Section or in Utah in Rich County. About two acre feet per acre.

MR. IORNS: I will read the averages: In the Upper Wyoming section, in 1944, from May 1st to September 30..... 2.04;
In 1945..... 2.52
In 1946 2.05
In 1947 2.59.

It makes an average of 2.30 for the four years.

In the lower Utah Section - 1944 2.70
1945 2.97
1946 1.90
1947 2.87

or an average for the four years of 2.61 acre feet per acre. (Woodruff-Randolph)

In the Lower Wyoming section (^{Beckwith}~~Pickwith~~)
1944 3.75
1945 4.25
1946 3.49
1947 2.95

average for the four years 3.61 acre feet.

In the Wyoming section of the Central Division the average in
1944 4.37
1945 4.65
1946 4.38
1947 4.38,

an average for the four years of 4.44.

In the Idaho portion of the Central Division- in
1944 3.50
1945 2.92
1946 3.41
1947 3.36

an average for the four years of 3.30.

In Idaho between Stewart Dam and the Utah State line below Preston
1944..... 2.06
1945 1.85
1946 2.18
1947 2.21,

or an average for the four years of 2.08.

In the Utah section below Cutler Dam in Box Elder County:
1944..... 3.29
1945 3.08
1946 3.88
1947 3.50,

or an average for the four years of 3.44.

That is headgate diversions per acre.

Mr. Bishop: The upstream diverts probably as much as 80 per cent of it occurring during the months of May and June. The Wyoming portion of the Central Division they had full water supply all summer.

MR. MILLER: The farmers' interest of using it on the land instead of closing of the headgate of the ditch, let it run down subsidiary swills and it returns to the river.

swales

MR. CHAIRMAN: I wonder if Mr. Iorns might have the figures on consumptive use compared to these same sections and figures. I believe they would be very revealing.

MR. IORNS: I have in one of my reports endeavored to determine the consumptive uses that occurred in the basin during these years of study, and the area is limited to that area above Bear Lake. I have given the definition of consumptive use, "Valley consumptive use" and it was based on the valley depletion, inflow into the valley less the outflow out of the valley, plus the 100% beneficial result from rainfall.

"Valley Consumptive use" is the sum of the water absorbed by and transpired from crops and native vegetation and lands upon which they are grown and that evaporated from bare land and water surfaces in the valley.

The valley stream flow depletion is computed as the difference between valley inflow, consisting of surface streams entering the valley, and valley outflow, consisting of surface streams flowing out of the valley. The valley consumptive use is the sum of the valley stream flow depletion and precipitation on the surface. In both of these determinations groundwater inflow into and out of the valley areas, change in groundwater storage in the valley areas, and change in soil moisture and water of saturation are not taken into account. These later items may cause gross errors in final results, but since quantitative information relative to them have not been obtained, it is assumed they have minor effect and can be eliminated. That is the summary of the definition as I use it in these studies. I will try to find the acre feet on consumptive use that I found in the different river sections.

I do not have it broken down in acre feet per acre, but I found for the section, the Upper Wyoming Section, as we call it, that it consumed, consumptive use:

54,890	acre feet	in	1944;
65,440	"	"	1945;
54,410	"	"	1946;
68,920	"	"	1947.

The total acreage included in that is 36,000 acres. You must consider that this does not only include consumptive use from the crop land but there would be consumptive use from evaporation and vegetation along the stream channel.

In the Lower Utah section, from a study involving about 51,821 acres, I determined the valley consumptive use in

1944	- - -	77,380	acre feet,
1945	-----	101,160	" "
1946	-----	70,670	" "
1947	-----	84,150	" "
1948	-----	72,780	" " ;

and in the lower section, down around the Woodruff-Mandolph section, it was impossible to set up very good figures there. There was some condition due to inability to measure all the inflow, but this is the figures,

1944	.....	38,250	acre feet,
1945	.....	43,433	" "
1946	.....	37,346	" "
1947	.....	47,722	" "
1948	.....	43,316	" "

Total acreage involved is 27,310 acres.

MR. TRACY: Mr. Iorns, have you reduced that--

MR. BISHOP: I would like to ask Mr. Iorns if we put in storage on these same lands, if the consumptive use percentage would be very much less? If that water was controlled the way that it should be, it would not have had anything like a half an acre foot to the consumptive use.

MR. IORNS: In applying storage water you would have to consider that that water would be applied in July and August, first part of August, when the consumptive use rate is the maximum for the season. When that water is held back and is put on the lands in July and August, the period of maximum consumptive use, it is going to be, a large part of it is going to be consumed. Of course, if you only have 30,000 acre feet and apply it to a restricted area the consumptive use would be high.

Mr. Cooper asked a question to which Mr. Iorns replied:

In the Upper Wyoming section there is 39,600 acres approximately. 8,997 acres under the Chapman Canal. Yes, that would include all of it. Depletion from the main stem of the river in Utah serves 37,100 acres; from the main stem in the Lower Wyoming section, 6,900 acres; from the Smith's Fork and the main stem of the river - in the Wyoming portion, and the Central Division This figure I did not include the present acreages that are included on the tributaries as we now have it set up on the Central Division. From the main stem of Smith's Fork and the main stem of Bear River 15,600 acres.

Q. But you have Upper Section of Utah.

A. Only about 200 acres that is not covered.

MR. COOPER: You are applying an average of 4 acre feet per acre above that point, and this 150,000 acre would give you another 1.05 acre feet to a supplemental supply that would amount to 5½ ac. ft. per acre. Why do you refuse to regulate then?

MR. BISHOP: It would be efficient to regulate when you have a big water right coming down.

MR. L. B. JOHNSON: We figure consumptive use of 1½ in Uintah. I don't know what their application is, but we are assuming that it is as much or more. Our application averages something less than 3 ac. ft. in the area and we find the consumptive use is 1½. Your consumptive use is complete in many instances, our consumptive use is low in all instances.

MR. COOPER: In our area it is 2.08 ac. ft. per acre.

The Last Chance Canal System in 1944 is 2.09 ac. ft. per acre. In 1945, _____ ac. ft.; in 1946, 2.34 ac. ft., in 1947 2.48 ac. ft. or an average of 2.26 ac. ft. for the year.

MR. JOHNSON: I take it back.

MR. COOPER: O.K. We're still friends.

ATTORNEY GENERAL HARNSBERGER: Talking about this "little dab of storage" we are asking for up there. What do we need for supplemental supply? To July 31st. In 1945, 99,680 ac. ft., in 1946 133,300 ac. ft., in 1947 74,435 ac. ft., or an average of 103,500 ac. ft. Now those were good years. In poor years we would have needed 150,000. Now let us see what the Engineering Committee

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said. . . The late season flow will be increased. You won't have to buy as much storage. Now are we going to hurt the people below that? They say there is an average surplus supply of 80,400 ac. ft. below Bear Lake.

MR. COOPER: This return flow that you speak of Mr. Persons, I would like to agree with you, but it is simply we can't help the geography of the country and we can't help the time lag that there is in that water reaching its destination, and if you take it out above, it is going to reach us the latter part of July, principal part of it, and the rest along the latter part of August. Now that is not going to do much good. The water that does us good is in June, May, June and July.

ATTORNEY GENERAL HARNSBERGER: Well, we will take it out and store it in the Winter. That won't hurt you. In June and July we won't be taking out any more, but we will be taking our return flow out in July and August. We will grant you that.

MR. CRANDALL: In the dry years when you would have to start using the storage earlier, the first use you diverted about and after used it returned flow, then the next ditch down the river in Wyoming would pick that up (each time used the quantity diminished from 1/2 to 1/4 to 1/16 so that there would only be 1/16 of the amount to go by.) You get a consumptive use out of each time you diverted it.

MR. COOPER: That would divert Bear Lake so that these gentlemen that you don't want to hurt would be deprived of that use of the water the next year.

MR. IORNS: Reading from the report of the Engineering Committee to the Commission:

Bear River water reaching Stewart Dam, in excess of that necessary to fill older dated downstream rights than the Bear Lake storage right, is the principal source of water for storage in Bear Lake. Any future storage project on Bear River above Stewart Dam, which would decrease this supply, would interfere with existing rights. It has been shown, considering irrigation storage rights alone, that the supply is insufficient in periods of drought to fill present needs and new storage above Bear Lake would increase this deficiency. Only by utilizing the large holdover capacity to tide it over drought periods can the present storage system provide storage water for power purposes. Upstream storage may also affect downstream irrigation rights in addition to the storage right in Bear Lake. The extent of the effect on existing rights would be dependent on the magnitude of upstream storage and such restrictions as might be placed on the maximum rate of diversion allowed.

MR. JOHNSON: That lake was depleted all winter, and is there anything in this compact or in the situation that asks us to guarantee over all years a complete filling of power rights, and that all losses or all shortages must come from these agricultural interests? I think the compact is wrong in its conception, I think it is wrong in its conclusion. In those years when we know the water will be light there should be a credit for power purposes if you are going to preserve these lower rights. There is not a single inhibition on the power company, and I am not against power. I want to tell you folks something. Back in the years when they were broke, their valuation was 40 million dollars more than they were worth, and their earnings were based on a fictitious value, there were men who would have jumped at that company; our stockholders would have been out, and Senator Hopkins will bear me out, we fought a battle with them. We could have destroyed Utah Power & Light with a turn of our hand and we did not do it. We fought for it. I believe our people are safely out of the bonding company and in a turn of prosperity and I am glad of

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*No Co. See
of Reservoir*

it. I think we should take a long view of it. Can we afford any encroachments? All potential irrigation rights to create power. Can we do it? Let us create an atmosphere in which we can work. Not whether we will hurt them in Box Elder or in Uintah. Let us get in an atmosphere so we can compact it. The little bit of water we take or that we might displace in the lake is nothing comparable to the water pumped out of it for the nonirrigation season. Let us place some restriction on our third partner here.

MR. COOPER: I want to congratulate you on performing a yeoman service. That was grand of you to save the power company. A good many more of us in the same boat. We had to go to the Sec.-Treas. of some mortgage company and ask them everytime we took a dime out of the till. There isn't any of us that were exempt. But the point that I make is the water that goes into Bear Lake is used for irrigation and when you divert it from above to the extent of 150,000 ac. ft. you are damaging irrigation more than you are power, and these people who have a controlling right with the power company, namely Utah-Idaho Sugar Co. and the West Cache Canal Company will say to the power company, Listen, you gave our water away in a compact, you have got to provide some way to let us have water. That is what's going to happen and they will be bankrupt worse than they were then. They will sue for not exercising due diligence in preserving their rights.

MR. MERRILL: What right would we have to say we will take the water away from the power company and give it to irrigation without paying the power company the value of its rights?

MR. PERSONS: We don't take 150,000. We might consume 75,000.

MR. MERRILL: What are you asking for 150,000 then?

MR. PERSONS: We want to store it.

MR. COOPER: 150,000 acre feet of water, Mr. Persons, we don't agree on that being a little dab. We want to be fair about the thing, but 150,000 acre feet is a little high.

MR. PERSONS: If we stored 150,000 it would only be in good years. We might consume 75,000.

MR. MERRILL: Where would you store it?

MR. PERSONS: In storage sites.

MR. MERRILL: Where are they?

MR. PERSONS: All over the basin.

MR. IORNS: Mr. Chairman, I think they are arguing about something ... There is one piece in this proposed draft that appears to set a limit on upstream storage. The main question is how much upstream storage will be allowed that will interfere with existing rights. If we are going to have upstream storage, you are going to interfere with existing rights. To what extent will the downstream users allow upstream storage that will not be subordinated to downstream use? Buy out power; later move it up there, but by buying out a right down stream and paying condemnation proceedings, etc. so long as it does not interfere with downstream rights. The way this is set up in this draft, in a series of drought years - there is a period of five years when there was considerable deficiency in supplies available to fill the irrigation requirements. During that 5-year period, do you want to make your upstream storage not subordinate to downstream irrigation, or do you want to pay for additional damage? There are points of division in what you are demanding. I don't

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know how a court would decide what are your equitable rights.

MR. LARSON: I would like to make a comment just to right me, because my side is neutral. We have a lot of information on evaporation, and we know it increases as we go down stream. We know it is overappropriated on the tributaries and even on the main stem. We know the flow existing, the diversion and so on. Does it not come down to two practical questions: First to determine the amount of water that is storable for new and supplementary users up at the headwaters above Bear Lake; and, second, to determine the amount of water that can be stored taking into consideration return flow and critical years, before it gets into existing rights, and somewhere along the line that figure will affect power, and as increased it affects both power and irrigation and irrigation is in the picture from then on. When I say cut into existing rights, that would be with the duty that you agree upon in the compact. Then after that any compromise and give and take, it seems to me it would be something else. You have plenty of information. Surely you can determine what is the possible storage places within reason and where; how far can you store before you cut into irrigation rights below. We have an abundance of information that we have no place else. I wonder if we can agree on what the questions are, and base whatever you do on facts.

MR. MILLER: There is another danger taking place in the Upper division which has not been considered, and that is the amount of flood damage. In the area above ~~Pixton~~. There is a probability that the same thing will take place this coming spring. I know certainly that Mr. Carlisle, who lives in the area, is certainly affected. I think it would be well for this gentleman to make a statement as to that damage.

MR. CARLISLE: We have had considerable damage three out of the last five years. We are quite fearful for this year. I might make this general observation. The Bear River Valley watershed I think it is probably quite undeveloped, may be somewhat neglected. It would seem to me that it would lend itself to material development. It would certainly lend itself at the present time to a program of water conservation, flood storage. I understand that the Bear Lake has not taken all of the runoff waters the past years. I understand there has been considerable damage to people below Bear Lake because the runoff water has not been taken care of. I think there is waste of water out of Bear Lake that we have not considered here, considerable waste. I think there could be more beneficial use made of water below Bear Lake, the same as more beneficial use above Bear Lake, and I think that if we go on to make a compact then we have got to take an attitude of a fair use of the water in the entire Bear River system. If you will pardon a personal reference, we are one of the large users on the land in the Bear River system. We are one of the old users. We probably are the oldest user of a sizeable amount of water on the land to grow feed and fiber and feed. We are interested in the spirit of a compact for the river providing it is consistent to all. But to consider the fact that the people of the lower river say that we are asking for something if we store water up there is all nonsense to me. I don't want to be unfair or uncomplimentary in that remark. I feel that there has to be a far more wholesome attitude toward this situation in its general application if you ever have a compact. Flood controls are being given a lot of consideration in other areas today. I think it is vital that they be given consideration here. They serve two purposes, flood control and they serve storage. Seriously, I think we have a flood control problem. I think there has been waste of water all up and down the system and, as Mr. Larson says, if we can get down to a fair appraisalment of these things, not motivated so much by the personal elements, but take a broad

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viewpoint, I think headway can be made.

MR. LARSON: The planning of any projects upstreams using federal funds, under the 1944 Flood Control Act, would have to go into flood control. All federal funds take into consideration flood control benefits if they are at all feasible.

MR. MILLER: This flood damage up there is a very real question and it can only be resolved as we use it by storage on the upper stream, probably above Evanston, or certainly above Randolph. I remember distinctly driving up there last year and seeing a house sitting there in approximately 4 feet of water.

MR. TRACY: Mr. Carlisle, where does this flood damage take place at?

MR. CARLISLE: Somewhat lower than Mr. Miller - that community at - Bridger and Twin Creek. Mr. Corleson's property west of the state line, that house has been submerged in water twice. - Just west of Sage, a mile west of the state line - Utah-Wayoming line. Just above our ranch. There has been considerable damage all through the valley from Woodruff to down below Copeville.

MR. TRACY: Is there any damage around Evanston?

MR. MYERS: I don't think there has been any inundation around Evanston, or above Evanston. Ofcourse, the flooding down the stream does somedamage to the banks and irrigation work, but I dont think there has been a great deal of submerged land.

Q. Mr. Bishop, what about development work?

MR. BISHOP: There is the Pleasant Valley site below Evanston that could be increased to 80,000 feet with reasoable expenditure. There half the river storage sites would be used without impeding the flow of the river. Then there is the Narrows below or East of Woodruff, right on the state line, which would have a capacity of 100 to 185,000 acre feet. A control proposition built right on the stream, but that would not do any good to Uintah County, but there are plenty of sites up there for any storage that we have asked for.

MR. COOPER: Mr. Myers, when would you have to store that water in order to control these floods?

MR. MILLER: Our storage up there would have to be parallel to the storage in Bear Lake.

MR. COOPER: When does it break up there and start to flowing freely? What time as a rule?

MR. MILLER: Well, the flood does not come until May and sometimes in the cold year it would not come until latter part of May and first part of June. That is when Utah Power & Light does most of their storing. We would have to store at the same time.

MR. BISHOP: All we want is our equitable share of it. We would turn it on to the lands above Bear Lake that might need supplemental water. That might include yours.

MR. MERRILL: Is his not above Bear Lake?

MR. BISHOP: There was one more item in paragraph 5 that I would change from October 1 of one year to April to May. April is a little early for us to store water.

MR. MERRILL: It appears to me from reading these reports and a study of this river that a discussion of 150,000 acre feet is just out of the question. We cannot get down to some reasonable



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a thing; nor the Kimball Decree in granting 6,000 feet means 6,000 feet. And so this question of vested rights needs a re-appraisal from my point of view.

MR. TRACY: May I ask a question on the 400 sec. ft. that was going down the river and was not stored. It does not reflect on the measurement.

Yes, I think it was 1460 feet.

MR. TRACY: Would this figure take into consideration -

MR. IORNS: No, that is all of the water that arrives at Stewart Dam that can be diverted, plus all of the inflow.

MR. TRACY: Then this 400 sec. ft. would have been measured.

MR. IORNS: Oh, yes, certainly it was measured.

MR. COOPER: May I ask Mr. Johnson a question? What time of year did you say that was?

MR. JOHNSON: I think in the latter part of May.

MR. IORNS: In my studies I deducted a quantity for inevitable loss in diversion, - leakage at the control gates.

MR. LARSON: Before Mr. Iorns continues, I want to say this room is reserved for a lecture from 12:45 to 2:00 o'clock, so, if it is alright with this commission, we will continue until 12:30 and reconvene and let them use the room.

MR. IORNS: That represents the 25-year average of the maximum amount of water that could have been stored in Bear Lake each year. The storage requirement of canals depending on Bear Lake for irrigation during that same period of time, the 25-year average is 159,880 acre feet annually.

MR. TRACY: That must be stored to satisfy the diversions down stream.

MR. IORNS: That is right. The storage replacement in 1934 was over five times the ~~requirement~~ replacement in 1945. So it depends on how much annual inflow comes in just how much additional supplemental water they need stored in Bear Lake. If all Bear Lake storeable water was deducted to filling annual irrigation requirements, there would have been eight years in the 25-year period that the annual supply was less than the annual requirements. These deficiencies range from 30,000 acre feet in 1926 to 325,000 acre feet in 1934. In the 5-year period from October 1, 1930 to September 30, 1935, there was a cumulative deficiency of 534,300 acre feet. In other words, the irrigation requirements exceeded the inflow from all sources, or the storable supply, by 534,300 acre feet. Another deficiency period, lower in magnitude, from October 1, 1938 to September 30, 1942. The two deficiency periods, which have occurred twice in the 25-year period, indicate that when the Bear Lake contents drop below about 600,000 acre-feet all storage and storable waters should be reserved for irrigation and none used in power production.

In the 25-year period there could have been an accumulative storable total of 2,370,700 acre feet in excess of irrigation requirements, indicating an average annual excess of 94,800 acre feet. In other words that is the average for a 25-year period in excess of irrigation requirements depending on Bear Lake. That would represent water that the power company uses for power production, or might be available for storage upstream. But it is now entirely used by the power company in power production and is a part of what they consider as their right.

MR. PERSONS: Coming back to storage. Certainly we can't say we would give storage to the Upper Basin at its low flow. It would have to be average condition.

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MR. WIEDMAN: I would like to add a statement to Mr. Cooper, that we agreed to let them do that and that was taken away from us again.

MR. COOPER: In 1934, when they were willing to divide with us, that saved us from economic chaos.

MR. WIEDMAN: We irrigated once every two weeks instead of every week and had a very reduced amount of water. You take that small amount there and follow it up year after year in a period of deficient rainfall, and see what that is doing to that storage. You are depleting that storage 150,000 acre feet each year. When that is moved up over ten years, that means a lot of water. We recognize that we have some other things to deal with. We have the vested rights of the power company. We cannot tell them we have to use it for irrigation. It brings on the evil day when we are going to be short. According to report of rainfall it goes somewhat in cycles. From 1923 to 1950 when it was full again.

MR. PERSON: I grant the only way to justify our 150,000 would be not to hurt anyone down below. The average over a 25-year period was 94,800 acre feet per year. If you are going to stick with averages, if you take 150,000 acre feet you are going to take 56,000 acre feet out of the lower division water users.

MR. CRANDALL: If you consume 75,000 acre feet you would have consumed in ten years 750,000 acre feet, and Bear Lake would have had 750,000 acre feet less than it had, and it did not have 750,000 acre feet as it was.

MR. WIEDMAN: In addition to the short space there in Article IV, we don't have any control in the use of that river. That lake level should have something to do with how much water you store. You take 150,000, that lake would have nothing. That has to be correlated. We have to coordinate power use of water with Bear Lake storage and with area use.

MR. COOPER: In 1926, according to this summary of Bear Lake storage, if all of the maximum storable water from Bear Lake or Bear River were put into the lake in 1926, there would be 133,600 acre feet. In 1931 it would be 78,700 ac. ft., in 1933, 121,600; in 1934, 37,700 ac. ft., in 1935, 42,100 ac. ft., in 1940 42,800 ac. ft., 1941, 64,000 ac. ft., 1945, 149,500 ac. ft. Now that is eight years out of the 25 years that there was not 150,000 acre feet of water coming down the river to Stewart in the lake. There was not that much water. There was ~~not that~~ would not be any for these people that have the rights.

MR. WIEDMAN: You will have to work something in there that we can share alike in. You must coordinate these things somewhat.

MR. COOPER: I am sorry to have to call that to your attention, Mr. Person.

MR. SMOOT: This takes me back 40 years. We boys stood around my Dad when we were horse trading. They tried to find everything on the other guy's horse and ~~xxxx~~ for quite a length of time, then finally when the sun started to get lower they thought the wife wanted them home, they would get down to business and start talking changes and figures, and they knew what the other guy's horse was and they would make a horse trade. I think you fellows have had quite a lot of time to find the ringbones and spavins on the other fellows' horse, so that you can get down to talking sense and getting something done. I think it is time pretty soon we were talking sense. The sun is getting low and if we are going to get a compact, we are going to start horse trading and get down to business.

MR. Chairman, is the mimeographed re-draft of Article V no ready?

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It is Article IV. Article IV was passed to members.

Adjourned to 2:00 p.m.

Governor's Board Room
January 31, 1952
10:00 a.m.

Round table

Mr Dorus

Mr Cooper

Kulp

Merrill

Baird

Sixrine

Lauridsen

Atty Gen Harro Berger

Person

Miller

Spaulding

Bishop

Tracy

Hanson

Sheer

L B Johnson

Lynn Crandall

not complete attendance

BEAR RIVER COMPACT COMMISSION
GOVERNOR'S BOARD ROOM
January 31, 1952
2:00 p.m.

CHAIRMAN LARSON: The Bureau of Reclamation figures on dam sites and reservoirs are in the report. The storage possibilities and the amount of storage water to be allowed are the two points. How do you want to proceed? What do you want to talk about first, in other words?

MR. COOPER: Whatever Utah and Wyoming prefer to do, that is agreeable with us. That is as to procedure.

MR. TRACY: We can either do it one of two ways: First, sit down, start with a certain amount of storage and see how it affects the irrigators down stream as to certain amount of storage. Another thing is to horse trade and make a case of how much is upstream.

CHAIRMAN: Should we talk about 1st the amount of storage to be allowed upstream, or before that do you want to be brought up to date on storage capacity?

The principal question in my mind as I see it is the amount of water that is storable up there for new and supplemental users; that is what is the possibility. That should have some bearing, and the next is the amount of water that can be stored upstream, taking into consideration the return flow and the critical years, dry cycles, and to find out whether it cuts into existing rights, irrigation below, and then go along with your trading or compromising or anything you want from there. That is the summary of my statements this morning. Then that will be the subject for discussion. Now, is the amount of water that can be stored above Bear Lake, and would you want to take into consideration return flow, and critical years, and whether other rights are interfered in below Bear Lake. Do you want any more information or review by Mr. Iorns?

MR. COOPER: We recommend that you ask Mr. Iorns to recite the storage facilities or available storage above Bear Lake and include the effect it would have on existing rights down stream in varied amounts.

MR. IORNS: I would rather have Mr. Thomas answer for available site.

MR. LARSON: Is it alright that we proceed that way? First, I suggest that you explain what you care to, and if you need Mr. Thomas of the Bureau of Reclamation, you can call on him.

MR. IORNS: He can tell more about the storage sites and possibilities than I have listed.

The Bureau of Reclamation for the past number of years, have covered quite thoroughly the storage possibilities above Bear Lake. There are sites up there that could be made reservoirs I guess, with a tremendous cost per acre foot, but they have narrowed the possibilities down to ones which they consider come somewhere within the realm of possibility. Not feasible now on a cost benefit basis. Starting upstream, they have according to the reports I have, they have no sites above Evanston, feasible sites, or that they would consider in the classification of storage sites except the Hilliard site on Sulphur Creek. The Bureau has given me figures for a 5,000 acre feet reservoir, and a 10,000 ac. ft. The 5,000 would cost \$293.00 per acre foot; the 10,000 acre feet reservoir would cost \$198.00 an acre foot. Those are estimated cost, 1951 price. That is one site, building for a five or ten thousand capacity.

Q. Is that the annual yield capacity, or reservoir capacity?

A. Based on reservoir capacity.

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MR. IORNS: The next reservoir they have listed is the off-stream reservoir located shortly below Evanston in Pleasant Valley. They have in this tabulation a reservoir for 10,000 ac. ft. capacity costing \$185.00 an acre foot; 25,000 ac. ft. capacity \$100.00 an acre foot and 150,000 ac. ft. capacity costing \$68.00 an acre foot. That would be the cost of storage capacity.

MR. MERRILL: The yeild cost would be materially more?

MR. LARSON: Yes.

MR. IORNS: This would be an alternate for a site on Woodruff Narrows and would not flood any valuable agricultural land like the reservoir at Woodruff Narrows would.

The Woodruff Narrows site for a reservoir of 10,000 ac. ft. would cost \$63 an acre foot. For 40,000 ac. ft. it would cost \$25 an acre foot; 70,000 ac. ft. \$17 an acre foot.

MR. THOMAS: For that first reservoir with capacity of 10,000 ac. ft. the water is there available, but when you get up to 30,000 ac. ft. it would not always fill. But at 70,000 ac. ft. there would be years, rather frequent, that it would not fill. As your reservoir capacity increases, the yield cost might be double.

MR. LARSON: There would be a third cost applicable, based on whatever you gentlemen make an assumption on what would be stored.

MR. IORNS: Next, I will list in downstream order the one on Woodruff Creek. They have two sites, the upper site and lower site for each for 9,000 ac. ft. The Upper site would cost \$244 an acre foot; the Lower site on Woodruff Creek would cost \$183 an acre foot, both 9,000 acre feet capacity. In the past year the Utah Power and Water Board has constructed a reservoir on a tributary to Woodruff Creek on Birch Creek tributary of 2240 ac. ft. capacity. How much did that cost, Mr. Tracy?

MR. TRACY: \$127,000.00.

MR. JOHNSON: From all sources you would count it about \$150,000.00.

MR. TRACY: That is top figure though.

MR. IORNS: No recommended sites until we get down to Smith's Fork. There is the Poker Hollow on Smith Fork for 6,000 ac. ft. at an estimated cost of \$219.00 an acre foot, for storage capacity and yield.

Then there is the Ashley site on Smith Fork, which is just below the mouth of Hobble Creek; for 5,000 ac. ft. it would cost \$141.00 per acre foot; 15,000 ac. ft. \$116 an acre foot, and for 21,000 ac. ft. reservoir \$100 an acre foot.

Then there is the Ferney site on Hobble Creek: 3,000 ac. ft., \$126 an acre foot; for 7,000 ac. ft. capacity \$95. an acre foot; 10,000 ac. ft. reservoir \$90 an acre foot.

And down on Thomas Fork, the next one down the stream, called the Giraffe Site, for 5,000 ac. ft. reservoir \$244 an acre foot; 10,000 ac. ft. reservoir \$164 an acre foot.

MR. LARSON: What about the yield?

MR. THOMAS: On the 5,000 ac. ft. it is always there; on the 10,000 ac. ft. nearly always there.

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MR. IORNS: That is the list of sites that the Bureau has classified as coming within the realms, coming within reasonable limits of possibility for the future.

MR. LARSON: The main thing is the difference in cost.

MR. BISHOP: If the higher capacity prices were not within what you consider feasible-

MR. LARSON: It is very low cost of storage but it is the figure on shutting off the stream.

MR. IORNS: It might be interesting along with that to give you the draft here which gives you a lot more information.

If you took the reservoir of 30,000 ac. ft. capacity above Woodruff Narrows as compared with storable water supply between October of one year and the following April 30th, the reservoir at Woodruff Narrows would fill in every year except 1934, 1935, 1940 and 1941, based on existing rights and no new storage above that amount. The maximum deficiency in 1935 would have been 7,100 ac. ft.

MR. LARSON: A maximum shortage of 25 per cent.

MR. IORNS: Page 21 of my report Available Water Supplies at Potential Storage Reservoir Sites of Bear Lake.

You would not have been able to store any water during high water run-off period because you would have interfered with direct flow water rights down stream. In fact of the 25-year period from 1924 to 1948, there are 11 of those 25 years in which water could not be stored during high water period without interfering with down stream direct flow rights. For a reservoir at Woodruff Narrows of 50,000 ac. ft. capacity it would be able to fill to capacity in every year between the period of October 1st of one year to April 30 of the following year except in 1931 when there would be a 4,800 ac. ft. deficiency; 1933 a 19,500 ac. ft. deficiency; 1934, 25,400 ac. ft. deficiency; 1935, 27,100 ac. ft. deficiency; in 1940 there would have been a 26,600 ac. ft. deficiency; in 1941 a 21,800 ac. ft. deficiency; and in 1945 when there would have been 11,600 ac. ft. deficiency.

In comparing these years as to whether you could have picked up any additional water during the high water period, there could have been no additional water stored during the high water period in those years of deficiency that would not have interfered with downstream direct flow irrigation rights, no additional high water storage.

MR. TRACY: No power water in that at all.

MR. IORNS: No, sir.

MR. WIEDMAN: In other words, this total yield of the river-

MR. IORNS: Between October 1st of one year and April 30th of the next year-

MR. WIEDMAN: It would have reduced Bear Lake storage that much.

MR. IORNS: There is not a great deal of difference. What I found in my studies of the river, the return flow does not lag very far behind the application of the water to the land. There is some lag and some drain out but it is a minor amount.

MR. TRACY: That two weeks was a rather short time for water to return.

MR. IORNS: You study the return over the gains above ~~Bear Lake and which has been~~

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Bear Lake, and it has been in each one of my reports, and you will find that that gain curve follows very closely the application of the water to the land. It has been in a maximum of two weeks. I will read it to you.

Each of the annual Bear River Hydrometric Data reports contained studies of daily gains in the various sections of the river above Bear Lake. These studies show that the river channel gains, which include return flows from water diverted and applied in irrigation as well as natural river gains, follow closely the pattern of water application. The studies also indicate that the amount of water retained in temporary groundwater storage, under the irrigated areas, for later release through seepage to drains and to the river channel is relatively small. In the area above Woodruff Narrows, the river channel gain practically ceases at the end of the heavy water application period, while in the areas between Woodruff Narrows and Border, only moderate river channel gains continue to occur after the heavy water application period. It thus appears probable that most of the return flow from supplemental water applied under Plan A or Plan B would return during the irrigation period. This river characteristic is in sharp contrast to some other river basins where the return flows from irrigation have produced relatively large continuous year round flows, when prior to irrigation the channels below were dry in the late summer and winter months.

Usable supplemental water return flows, occurring during the period of application of supplemental water from storage, could be utilized in decreasing the apparent amount of supplemental storage required. Some of the return flows from supplemental waters might occur too far downstream to be reused by the areas needing supplemental water. In this case, some rights not participating, might receive benefit of supplemental water return flow. Return flows from supplemental water, occurring during the non-irrigation season, would be available for filling downstream storage rights, thus partially compensating for rights affected during the storage period.

MR. WIEDMAN: There would not be very much return flow from supplemental water.

(Mr. Iorns explained the consumptive use flow curve on the blackboard.)

Mr. Iorns added: There are 27 ditches before it reaches Idaho.

MR. IORNS: I have made some studies on Supplemental Storage Requirements. I am sorry to see Mr. Person make so much stress on the report that the Engineering Committee put out. I prepared that study and I could not get anyone to help me with it. That does not include water that returns to the stream and is available for our use again.

Since that report I have put out a later one, August 9, 1951, on Supplemental Storage Requirements. I would like to read what I consider to be the supplemental water storage requirements that would be dependent on a reservoir at Woodruff Narrows. You can rule out your Copeville area.

Mr.: Generally speaking we could get them without a supplemental water when conditions are normal, much better return in lots of years. The valley is narrow and it soon gets back into Bear River. In that area it would be less than 2 weeks.

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MR. IORNS: 1924 for this 45,000 acres, I computed that it would require 28,000 ac. ft. of storage in this state for the lands dependent on Woodruff Narrows. I assume that the diversions during this period of time (draws on board) - that a diversion that would roughly correspond to that. In other words that calls for a total of 2.7 ac. ft. per acre. In this period we diverted 25,800 ac. ft. In this period from last two weeks, we diverted 19,700 ac. ft. During June we diverted 53,600 ac. ft. and in July 22,400 ac. ft., or a total of 121,000 ac. ft. needed to be supplied to these 45,000 acres of land to give them a full irrigation requirement.

MR. COOPER: How much water do they have now for this 121,000.

MR. IORNS: Studying the pattern of divers application of water and return flows and the consumptive use rates, I have found that it would require at Woodruff Narrows, something like this (draws) where you release at Woodruff Narrows a flow of water comparable to that - (indicates) point drops off there. The storage capacity needed in the reservoir here to each one of these years 1924 to 1948 to give this section here 2.7 acre feet per acre:

In 1924	....	28,000	ac.	ft.
1925		11,000	"	"
1926		24,000	"	"
1927		11,000	"	"
1928		20,000	"	"
1929		5,000	"	"
1930		20,000	"	"
1931		60,000	"	"
1932		8,000	"	"
1933		20,000	"	"
1934		80,000	"	"
1935		15,000	"	"
1936		20,000	"	"
1937		22,000	"	"
1938		14,000	"	"
1939		44,000	"	"
1940		43,000	"	"
1941		11,000	"	"
1942		15,200	"	"
1943		10,200	"	"
1944		3,200	"	"
1945		5,400	"	"
1946		23,200	"	"
1947		4,000	"	"
1948		26,000	"	"

In 22 of the 25 years the maximum was 28,000 ac. ft. A reservoir at Woodruff Narrows of about 28,000 ac. ft. of water would secure your supplemental requirements in 22 of the 25 years. That does not take into account reservoir losses. Some storage loss, that would amount to - from the 1st of April to end of July - which would amount to some 2,000 ac. ft. You would have to build a 30,000 ac. ft. reservoir to take care of the 2,000 ac. ft. loss before you would take out the water to apply to the land and have 28,000 ac. ft.

I applied a similar study to a reservoir at Hilliard for this area on Sulphur Creek, and considering the requirements of the land between mouth of Sulphur Creek and Woodruff Narrows, about 15,000 acres, and taking the supplies that were available, natural flow supplies available at the mouth of Sulphur Creek together with what supplemental water would be required, I found the following amount of supplemental water required for storage at Hilliard:

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1924	5,000 ac. ft.
1925	0
1926	2,800
1927	400
1928	1,600
1929	0
1930	3,000
1931	6,600
1932	400
1933	3,000
1934	14,200
1935	1,600
1936	2,000
1937	1,200
1938	1,000
1939	4,400
1940	8,600
1941	400
1942	2,200
1943	200
1944	0
1945	0
1946	4,600
1947	0
1948	4,400 ac. ft.

That would indicate there that except for 1934, if I took out these dry years of 1931, 1934 and 1940, that a reservoir of about four or five thousand acre feet would take care of the 15,000 acres lying between Sulphur Creek and Woodruff Narrows.

MR. TRACY: How many acres are contained in this particular state?

MR. IORNS: 45,000 acres covered in Woodruff Narrows reservoir site, - served between Woodruff Narrows and Pixley Dam. 15,000 acres in the Sulphur Creek.

For the benefit of Mr. Johnson who was absent, Mr. Iorns reviewed his report of August 9, 1951.

MR. PERSON: In other words, would 2.7 distributed over the years meet your needs?

MR. JOHNSON: Well, I don't know. Our divertible flow has been a little more than that.

MR. IORNS: Your 2.7 has been made up of a diversion better than something like this instead of like that. (indicating)

MR. JOHNSON: I felt that that area, if it had proper water service should be about 3 feet.

MR. TRACY: I would like to ask Mr. Iorns - this 45,000 acres and the 15,000 acres covers practically all of the land in the Upper Section.

MR. IORNS: For which there are apparently recommendable reservoir sites to serve.

MR. MERRILL: And that would make a total of about 35,000.

MR. IORNS: I figure 5,000 for reservoir at Sulphur Creek, 15,000 ac. ft. below the mouth of Sulphur Creek. 15,000 included lands here up to Woodruff Narrows.

MR. TRACY: Out of that 35,000 ac. ft., these two reservoirs, how much would be returned to the river in the form of return flow to Pixley Dam?

MR. IORNS: By that time it would be pretty well used up.

MR. MERRILL: It would not reach Border at all.

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MR. IORNS: It would be pretty well consumed. Maybe 10% or 20% would reach below Pixley Dam, but that would increase the annual flow into this Central Division and it would give them right to divert it and there would be very little get to Stewart Dam.

MR. COOPER: When you have this 150,000, or even 105,000 that has been calculated - that water does not return to the river in sufficient amount that these people down below who have existing rights, are going to get any benefits. They yield this right, then you enjoy the privilege of applying it on your land and you have a nice water right but they don't have any. How are you going to substitute that.

MR. TRACY: I asked you about the 35,000 acre feet - that is 5,000 in Sulphur Creek reservoir and 30,000 in Woodruff Creek. You say there would be no return flow?

MR. IORNS: Very little in my estimation.

MR. TRACY: What about the rest of the flow? Would there be any in Pixley Dam?

MR. IORNS: This utilizes all natural flow, plus supplemental storage, makes up their total requirement.

Q. Any from Pixley Dam?

A. Not from these reservoirs.

Q. What about rest of return flow from regular irrigation?

A. That ceases when flow goes off.

Q. Then no flow in Bear River below Pixley Dam.

MR. TRACY: Well, what is there now?

MR. IORNS: How much of the water passing Pixley flow is new water? I cannot answer it. The people above would not pay for storage beyond their needs, and that is all there is to it. They would only build storage space to fill that supplemental requirement.

MR. TRACY: What I am after is if these two reservoirs are built, what effect would it have on the down river users.

MR. IORNS: The storage would occur during the winter as I propose, from October 1st to April 30th. In every one of these years you could actually store in your reservoir 35,000 ac. ft. except in two or three years of deficient runoff. That water is water that now arrives in equal amount at Stewart Dam and is available for storage in Bear Lake. We will call it power storage if you want to give it a name.

Q. It would be called also irrigators' storage.

A. Well, I don't think when you consider storage in Bear Lake you can consider that the power company considers primary storage is for irrigation purposes, and they will meet their irrigation requirements unless upstream ~~power~~ diverts their storage to where they cannot meet those obligations, so it would have to be classed as power storage.

MR. IORNS: The application of this water to the lands during this time of the year would be, as I said, almost entirely

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consumptively used above Stewart Dam or above any place where Bear Lake delivers water available in the form of storage or natural flow, or up river flow.

MR. MERRILL: Would you say that is what is stored now?

MR. IORNS: All the winter flow is not now stored in Bear Lake. The application of this water durint the irrigation season to the lands would be, I believe, almost 100% consumed, at least upstream storage amounting to 35,000 ac. ft.

Mr. Johnson inquired if Mr. Iorns had measured all of the rivers contributing water to Bear Lake in his reports, to which Mr. Iorns replied yes, it included the readings of gauges from May 1 to Sept. 30, each included. He said if there were any diversions from Bear River into Bear Lake that Bear Lake, over a long period of years, would just about hold its own; that evaporation is greater than the inflow.

MR. JOHNSON: You fix a line on the Bear Lake that the power company may not exceed and that the irrigators may not exceed, and we will agree. Let's first fix all three interests on the Bear Lake. You peg the power company and then we will help you peg the rest. But we will not accept the evaporation then. With these pumps in the lake, we are afraid to agree to any figure, to any loss within the reach of your pumps. Unless the power company agrees that they will not divert it beyond there and you folks will take it as a danger line, then we would be willing to fix a danger line in storage above the lake.

MR. PERSON: I think some of our people would like to ask some questions of Mr. Thomas.

Q. Mr. Thomas, some three years ago we had a meeting at Preston, I believe, with a list of projects that were contemplated by the Bureau of Reclamation; proposed project to irrigate some new lands in one of the valleys west of Tremonton.

MR. THOMAS: That is a possibility.

Q. That would contemplate a canal out of Bear River to supply that land.

A. That is correct.

Q. Where would the diversion for that canal be?

A. In the vicinity of Oneida dam.

Q. In the vicinity of Grace?

A. Below. Down stream.

Q. In the narrows of Bear River?

A. Correct.

Q. About how many acres?

A. That would depend largely upon this compact.

Q. As I remember, it was a fairly large area of land involved.

A. Assuming that a reservoir was built somewhere in the area of Grace, Oneida, and so on, it would contemplate that there would be a fairly large water supply made available at this point for this new project. There would have to be made available water.

Q. Where would it be made available?

A. From the river.

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Q. Where would most of the water come from?

A. Most of the water would come from gains below Bear Lake including on down to Cutler Dam. Part of this gain would be worked upstream.

Q. Does not include importation from another basin?

A. No.

Q. It has been in our minds, by such savings and possible construction of reservoir in Oneida area plus some enlargement, let us say at Cutler, - We in the Upper basin have failed to see how it is possible to contemplate a project such as this and then on the other hand to say it is not possible to have a certain amount of storage on the upper Bear River.

MR. THOMAS: A certain amount of this upstream water is required to meet these downstream existing rights. Another thing is that most of the water in Bear River does not come from above Bear Lake, it comes from below, at least 2/3. And that is why we do not think this would affect the storage like these people think today. I think the project is centered to existing rights.

MR. LARSON: I think they are mixing up a third possibility. That is something that has not been held yet.

MR. COOPER: If we build a reservoir at Cutler, probably past the 3,000 ac. ft. or 200,000 ac. ft., that would take care of the users below Cutler, would it not? I mean for irrigation.

MR. THOMAS: Yes, and in so doing, some exchange water made available.

Q. Mr. Thomas, if you would build a reservoir of 200,000 ac. ft. more than is there, there would be something like 2,000 acres - the rest is a poor grade of pasture and swamps.

MR. COOPER: Of course, if it controls this million acre feet that Wyoming thinks goes to waste, it would be quite a reservoir.

A. It would not be a million acre feet.

Q. What is the figure?

A. It would be pretty close to three-fourths of a million acre feet a year.

MR. TRACY: How much of that has come from say up above Grace, or some place? How much of that is supplied by Cache Valley.

MR. THOMAS: Approximately half.

MR. LARSON: And how much above Bear Lake?

MR. THOMAS: About one-third.

MR. TRACY: One-third of the 750,000 ac. ft.?

MR. THOMAS: Some of it is stored in Bear Lake, some of it is past.

MR. IORNS: You understand, don't you, Mr. Person, that this reservoir. If a storage reservoir were put in, that whatever rights that that storage reservoir interfered with would have to be paid for.

MR. COOPER: When you build your reservoirs, that will take the water away under the present rights.

A. They will have to build their reservoirs first.

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MR. MILLER: In other words, if the supply - the shortage could take place in Cache Valley, and the West Line Canal, there would no longer be a shortage.

A. There is no shortage.

Q. There was in 1935.

A. But the lower people have Bear Lake as a source of supply, and that makes up their deficiency.

MR. COOPER: I move we recess for fifteen minutes.

MR. SPAULDING: I move we adjourn.

MR. THOMAS: These lower people do have an opportunity to supplement their water supply. They do, but they will have to pay plenty. You people on the Upper River have the same opportunity and you will have to pay. You can participate in Cutler, but you would have to pay plenty for it. You could get it the same way as the lower users.

Q. How?

A. Through exchange.

MR. MERRILL: 35,000 ac. ft. would be all that you could possibly need for supplemental use above Bear Lake and still you are asking for 150,000 when 35,000 is all you could use, and that comes from the power company or lower users. And it seems to me that if you take that 35,000 ac. ft. and realize that it is being given you, and pare that down, we might get together. I would like to have you answer this question: If we yield to these storage rights, what solid, single thing would Idaho get out of this compact?

MR. BISHOP: What is Wyoming getting?

MR. MERRILL: You are getting all this water.

MR. PERSON: If you were representing the Upper Basin, what is the minimum you would ask for if you would meet your supplemental needs? You don't have to answer it if you don't want to.

A. I am not going to answer it.

MR. LARSON: Any more questions? Do you want to adjourn to the morning, and if so what time?

WYOMING: How would it be for each state to come in with a redraft of Article V, filling in the blanks?

MR. LARSON: To say the least, it would be interesting. Idaho, do you want to do that?

MR. MERRILL: It won't help any with their attitude, of 150,000 ac. ft.

MR. PERSON: Let Utah name a figure and I suggest each state name a figure.

MR. TRACY: How many acres do you figure in Wyoming, in the upper division?

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MR. PERSON: I think you will find this, that the Engineering Committee arrived at the needs by states, and we will take the Engineering Committee figure.

MR. LARSON: Mr. Spaulding, did you make your suggestion in a motion?

MR. SPAULDING: I make it in the form of a motion, that we come here in the morning at 9:30, with each state to have a redraft of Article V with the figure for Article V.

MR. LARSON: Any second to it?

MR. TRACY: What figure are we going to submit? The whole figure, or the break down of the figure. Total figure for all of the additional storage above Bear Lake for Wyoming, for Idaho, for Utah.

A. Idaho probably won't have any figure.

Q. Are we not agreed on the areas for each state?

A. From the main stem of the river, we are, I think. For the tributaries, they are only approximate. They are listed in the Engineering Committee report, as Mr. Person pointed out, so if you take this for each one of your states.

MR. TRACY: I will second it.

MR. LARSON: You have heard Wyoming's motion. Ayes? No? We meet at 9:30 in the morning, and take a look at these figures.

Adjourned.

BEAR RIVER COMPACT COMMISSION
GOVERNOR'S BOARD ROOM
Salt Lake City, Utah
February 1, 1952
9:30 a.m.

2ND OF
DAY # 6

(Meeting called to order at 10:00 a.m.)

MR. LARSON: When we adjourned, the three states were to come back with figures for Article V. Now Idaho, how would you like to proceed? What is your suggestion for starting out?

MR. COOPER: After studying this graph on p. 11, Plate 11, Report No. 10, Analysis of Bear Lake storage, we noticed that from the year 1930 to 1943, there was no storage available excepting what was used for irrigation requirements.

MR. LARSON: Just a minute. I want to ask you how you want ~~to~~ ~~proceed~~ each state to proceed.

MR. COOPER: It is agreeable with us to make our statements, if that is agreeable with the other states.

MR. TRACY: Do you have any suggestions. Do you want to call on them alphabetically, then where does Utah come.

MR. LARSON: I will call alphabetically then; on Idaho, and then Utah and Wyoming. I could reverse them.

MR. COOPER: I think it would be a good idea to reverse them.

MR. LARSON: It has been customary in the other Compact Commissions to call on them alphabetically, and sometimes they reverse them and start from the bottom.

Decided to go ahead alphabetically.

MR. COOPER: As it was presented to us yesterday. When this Plate 11, Report No. 10, Analysis of Bear Lake Storage was prepared by Mr. Iorns, it was pointed out to us yesterday there were thirteen years from 1930 to 1943, that the only accumulated surplus storage water in Bear Lake beginning with first storage on October 23 that there was no water available for storage for power purposes above Bear Lake. Consequently, we feel that--

Q. You mean for irrigation.

MR. COOPER: I mean for irrigation. We feel sure that any water that we grant has a primary right, but storage above Bear Lake would seriously interfere and handicap the irrigation rights below, and in order to effect settlement, we will agree to primary storage rights which will include the present storage above Bear Lake of which 14,000 ac. ft. of 20,000 ac. ft. overall. That includes the 14,000 ac. ft.

MR. LARSON: Utah?

MR. TRACY: I understand you make no additional storage.

MR. COOPER: 11,000 ac. ft. in addition to what already exists.

MR. TRACY: Well, Mr. Chairman, Utah suggests the following for consideration of the Compact Commission: The irrigated area in the Bear River Basin, as furnished by the Bureau of Reclamation, are as follows:

Idaho ...	194,000 acres
Utah	234,000 acres
Wyoming .	55,000 acres.

The drainage area in the Bear River Basin, as furnished by the Bureau of Reclamation is as follows:

Idaho	3,340 square miles
Utah	2,270 square miles
Wyoming..	1,490 square miles
on a total of.....	<u>7,100</u> square miles of drainage area