

INTERNATIONAL JOINT COMMISSION

HEARINGS

OF THE

INTERNATIONAL JOINT COMMISSION

ON THE REFERENCE BY THE UNITED STATES
AND CANADA

IN RE

LEVELS OF RAINY LAKE

AND OTHER UPPER WATERS OF
THE LAKE OF THE WOODS WATERSHED
AND THEIR FUTURE REGULATION
AND CONTROL

BEING

PUBLIC HEARINGS

AT INTERNATIONAL FALLS, MINN., SEPTEMBER 28, 29, 30, 1925



WASHINGTON
GOVERNMENT PRINTING OFFICE
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INTERNATIONAL JOINT COMMISSION

CANADA

CHARLES A. MAGRATH, *Chairman.*
HENRY A. POWELL, K. C.
SIR WILLIAM HEARST, K. C. M. G.
LAWRENCE J. BURPEE, *Secretary.*

UNITED STATES

CLARENCE D. CLARK, *Chairman.*
FRED T. DUBOIS.
P. J. McCUMBER.
WILLIAM H. SMITH, *Secretary.*

HEARINGS OF THE INTERNATIONAL JOINT COMMISSION
IN RE THE LEVELS OF RAINY LAKE AND
TRIBUTARY WATERS

INTERNATIONAL FALLS, MINN.,
Monday, September 28, 1925.

The International Joint Commission met, pursuant to notice, in the Koochiching County Court House, International Falls, Minn., at 10 o'clock a. m.

Present: Clarence D. Clark, presiding, Charles A. Magrath, Fred T. Dubois, Henry A. Powell, K. C., P. J. McCumber and Sir William Hearst, K. C. M. G.; Wm. H. Smith and Lawrence J. Burpee, secretaries; Major R. W. Crawford, Corps of Engineers, U. S. Army, and Mr. S. S. Scovil, Assistant Director, Dominion Water Power and Reclamation Service, Ottawa, Canada, Engineers.

APPEARANCES

- E. W. Backus, Minneapolis, Minn., representing Keewatin Power Co., Ltd., Kenora; Ontario & Minnesota Power Co., Ltd., Ft. Frances, Ont., Ft. Frances Pulp & Paper Co., Ltd., Ft. Frances; Rainy River Improvement Co., International Falls, Minn., and the Minnesota & Ontario Paper Co., International Falls, Minn.
- R. W. Craig, Winnipeg, Attorney General of the Province of Manitoba.
- T. L. Cory, Ottawa, representing the Department of the Interior of Canada.
- S. J. Chapleau, Ottawa, representing the Department of Public Works of Canada.
- J. Preudhomme, Winnipeg, representing the City of Winnipeg.
- R. E. Guy, Winnipeg, representing Winnipeg Electric Co. and the Manitoba Power Co., Ltd.
- C. H. Attwood, Winnipeg, District Engineer, Winnipeg, representing the Department of the Interior of Canada.
- Albert F. Pratt, St. Paul, Minn., Assistant Attorney General, State of Minnesota.

- E. C. Oberholtzer, Rainer, Minn., representing mass meeting of citizens at Rainer, the Birch Point Association of Rainer; various American property owners; himself as a property owner in Minnesota and Ontario.
- Otto Dirks, representing the Auditor of the State of Minnesota in his capacity as custodian of the land and timber of Minnesota.
- George Wilkie, Toronto, representing the Canadian National Railways.
- Hugh J. McClearn, O. J. Larson, F. H. Holliday, George H. Lommen, and M. C. Gebert, representing the Minnesota Arrowhead Association, consisting of the following member organizations: Barnum Commercial Club, Biwabik Commercial Club, Carlton Commercial Club, Cook County Auto Club, Cass Lake Commercial Club, Chisholm Kiwanis Club, Cloquet Civic and Commerce Association, Cook Commercial Club, Duluth Chamber of Commerce, Ely Commercial Club, Eveleth Commercial Club, Gilbert Commercial Club, Grand Rapids Commercial Club, Hibbing Commercial Club, Lake County Development Association (Two Harbors), Meadowlands Commercial Club, Moose Lake Commercial Club, Nashwauk Club, Tower Commercial Club, Virginia Chamber of Commerce and West Duluth Commercial Club.
- Charles E. Elmquist, St. Paul, Minn., and A. J. Murray, Ft. Frances, Ont., representing Shelvin-Clarke Lumber Co., the Virginia & Rainy Lake Lumber Co., the Cloquet Lumber Co., and the Northern Lumber Co.
- C. E. Berkman, Chisholm, Minn., representing riparian interests on the American side of the boundary.
- Geo. H. Selover, President of the Minnesota Division of the Izaak Walton League and member of executive committee of the League.
- H. A. Tibbitts, Ft. Frances, Ont., representing the Town of Ft. Frances.
- L. W. Wilson, representing Village of Aurora and the Township of White, St. Louis County, Minn.
- A. J. Thomas, Ely, Minn., representing the Commercial Club of Ely.
- A. D. George, Ft. Frances, Ont., representing Mine Center Lumber Co., Ltd., Border Lumber Co., Ltd., and J. A. Matthier.
- J. M. Couzet, Commissioner of Forestry and Fire Prevention of Minnesota.
- James F. Gould, Game and Fish Commissioner of Minnesota.
- David Hurlburt, International Falls, Minn., representing the Village of Rainer, Minn., the Commercial Fishermen's Association of Rainer, and the small property owners on the south shore of Rainy lake.

- A. J. Murray, Ft. Frances, Ont., representing riparian owners on the Rainy river at Ft. Frances and persons owning islands on the Canadian side of the boundary.
- John T. Stewart, Consulting Engineer of the Minnesota Game and Fish Commission.
- Ralph D. Thomas, Minneapolis, Minn., Consulting Engineer, representing himself and associates interested in possible power development on the international boundary.
- J. H. McNivin, Chisholm, Minn., as a citizen interested in the progress of Minnesota.
- C. M. Hillman, representing Board of County Commissioners of Lake County, Minn.
- A. L. Richey, Ely, Minn., Supervisor of Forests, U. S. Forest Service.
- C. J. Lenander, representing his interests on Rainy lake and lakes tributary thereto.
- J. P. Opsahl, representing his interests and the interests of other land holders, Lower Basswood Falls.
- F. A. Dunsmoor, Minneapolis, Minn., representing island owners on the north side of the boundary.
- Wm. L. Carss, Representative in Congress from the eighth district of Minnesota.
- John G. Handberg, in his own behalf as a property owner on Crane Lake.
- J. H. Chase, Minneapolis, Minn., representing himself as land owner on Crane lake and Sand Point lake.
- M. A. Malone, Ft. Frances, Ont., in his own behalf as a land owner on the banks of Rainy lake.
- H. M. Nelson, Ft. Frances, Ont., in his own behalf.
- D. M. Price, Ft. Frances, Ont., representing property owners at Pithers Point and Ft. Frances.
- Jakob Hvoslef, in his own behalf as an owner of summer houses on Rainy lake on both sides of the boundary.
- V. L. Power, representing citizens of the village of Hibbing, Minn.
- E. J. Mica, of Hibbing, Minn.

Mr. CLARK. Gentlemen, you will please come to order. The International Joint Commission, composed, as you know, of three citizens of Canada and three of the United States, which under the treaty considers not only waterways which border the two countries, but also general matters of interest of the two countries that may be referred to it by either government, is meeting here today, after public notice has been given, to consider the question of the level of the waters of Rainy lake and tributary lakes under the reference

from the two governments, an identical reference from each government.

A number of years ago this Commission acting in a similar capacity visited this section and fixed, temporarily at least, what it considered the most efficient level for all purposes of the Lake of the Woods and also of Rainy lake and other waters. The level was not fixed arbitrarily for all time, but the question was practically left open for future consideration should industrial, economic or other developments of the country seem to warrant at some future time a change in the level which was then fixed.

We have no record of any application having been made by any parties for a change in this level, but evidently it has been called to the attention of one or both of the governments that a change might be beneficial. Therefore, the two governments have asked the Commission to make further investigations of the subject matter, and I will ask the secretary to read the reference that has been sent to the Commission by the governments, which will indicate to you the purpose of the Commission at this time and the authority under which it acts.

Secretary SMITH. The reference is as follows:

DEPARTMENT OF STATE,
Washington, February 27, 1925.

INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

SIRS: I have the honor to inform you that, in pursuance of Article 9 of the Treaty of the 11th January, 1909, between the United States and Great Britain, the Governments of the United States and Canada have agreed to refer to the International Joint Commission the following questions for examination and report, together with such conclusions and recommendations as may be deemed appropriate:

Question 1. In order to secure the most advantageous use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes; and in order to secure the most advantageous use of the shores and harbors of both Rainy lake and the boundary waters flowing into and from the lake, is it, from an economic standpoint, now practicable and desirable, having regard for all or any of the interests affected thereby, or under what conditions will it become thus practicable and desirable—

(a) To regulate the level of Rainy lake in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,108.61 sea level datum?

(b) To regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,120.11 sea level datum?

(c) To provide storage facilities upon all or any of the boundary waters above Namakan lake?

Question 2. If it be found practicable and desirable thus (1) to regulate the level of Rainy lake, and/or (2) to regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls, and/or (3) to provide storage facilities upon all or any of the boundary waters above Namakan lake—

(a) What elevations are recommended?

(b) To what extent will it be necessary to acquire lands and to construct works in order to provide for such elevation and/or storage, and what will be their respective costs?

(c) What interests on each side of the boundary would be benefited? What would be the nature and extent of such benefit in each case? How should the cost be apportioned among the various interests so benefited?

Question 3. What methods of control and operations would be feasible and advisable in order to regulate the volume, use and outflow of the waters in each case in accordance with such recommendations as may be made in answer to questions one and two.

Question 4. What interests on each side of the boundary are benefited by the present storage on Rainy lake and on the waters controlled by the dams at Kettle falls? What are the nature and extent of such benefits in each case? What is the cost of such storage and how should such cost be apportioned among the various interests so benefited?

Each government will appoint from its public service such engineering and other technical assistance as may be necessary to enable the Commission to make the desired examination and to submit their report.

I am, Sirs,

Your obedient servant,

CHARLES E. HUGHES.

Mr. CLARK. You will notice, gentlemen, that the date of that reference is in February last. The question might naturally arise in your minds why the apparent delay until the last of September of the same year before the Commission took action upon the matter. It arises from two facts: First, that it has always been the desire and the practice of the Commission to give abundant notice, so far as possible, through the public press and otherwise of the meetings of the Commission for any specified purpose, in order that every interest might come freely before the Commission and make its views known; second, the Commission felt that it would be of great benefit to it if it could have such new engineering data as time would permit before it had this hearing.

However, immediately after the reference notices were sent out to parties who might seem to be interested without waiting to hear from them. The engineering questions, in the first place, were taken up and notice was sent out on May 19th to the following:

The Governor, the Attorney General, the Auditor, the State Game and Fish Commissioner and the State Drainage and Water Commissioner of the State of Minnesota, St. Paul, Minn.; William Spry, Commissioner, General Land Office, Washington, D. C.; W. B. Greeley, Forester and Chief, Department of Agriculture, Washing-

ton, D. C.; E. W. Backus, St. Paul, Minn.; Minnesota & Ontario Paper Co., International Falls, Minn.; Charles E. Burke, Commissioner of Indian Affairs, Washington, D. C.; Representative of the Izaak Walton League, St. Paul, Minn.; the Town Clerk, Ranier, Minn.; the Virginia & Rainy Lake Lumber Company, Virginia, Minn.; the Town Clerk, International Falls, Minn.; the Town Clerk, Warroad, Minn., and the Town Clerk of Baudette, Minn.

Answers were received from some and others replied that they were not ready to make definite answer at that time. All of the answers of whatever nature will be included in the record without reading them at this time.

There were also sent out copies of the reference which has just been read in your hearing to parties on the Lake of the Woods that might be interested, all of which will also be included in the record without reading.

There have also been received by the Commission voluminous protests from various towns, city organizations, conservation societies, individuals and corporations against any present change of the level of the lake, which also will be inserted in the record without reading.

One of the last to be received was a resolution adopted by the delegates to the international convention of the citizens of Ft. Frances, Ontario, on September 27, 1925, which will be also included in the record.

(The questions submitted and the replies and protests received are as follows:)

MAY 19, 1925.

The Honorable, The GOVERNOR OF MINNESOTA,

St. Paul Minn.

SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A statement in detail of appraised value of public or state lands under your jurisdiction for which flowage rights are required with the present upper limiting elevation of Rainy lake at 1,108.61 sea level datum (497.0 D. P. W. datum).

2. A statement in detail of appraised value of public or state lands for which flowage rights are required with the present upper limiting elevation of Namakan lake at 1,120.11 (508.5 D. P. W. datum).

3. A statement of any claims pending on your part against the owners of the dam at the outlet of Rainy lake and the dams at the outlets of Namakan lake for flowage or other causes relating to the levels of Rainy and Namakan lakes.

4. If available, a statement of extent and appraised value of public or state lands which would be affected by an increase in level, (a) on Rainy lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61; (b) on Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11; (c) on boundary waters above Namakan lake if held at high water mark or five feet above such elevation.

5. If for a flowage easement for storage purposes full appraised value of lands is not required, then on what terms can such flowage be secured?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

P. S. With the object in view of expediting the receipt of technical data, I have taken the liberty of a direct approach to a number of your state officials, and for your information enclose herewith carbon copy of communication addressed to them.

STATE OF MINNESOTA, EXECUTIVE DEPARTMENT,
THEODORE CHRISTIANSON, GOVERNOR,
St. Paul, May 22, 1925.

Mr. WILLIAM H. SMITH,
Secretary International Joint Commission, Washington, D. C.

MY DEAR MR. SMITH: This will acknowledge receipt of your letter of May 19th requesting certain information pertaining to the levels of Rainy lake and of the boundary waters flowing into and from that lake.

I note that you have already written to the Attorney General, the State Auditor, and the Game and Fish Commissioner. I shall confer with them and see that the desired information is furnished to the Commission.

Very truly yours,

THEODORE CHRISTIANSON.

MAY 19, 1925.

The ATTORNEY GENERAL,
State of Minnesota, St. Paul, Minn.

SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

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2. A statement in detail of appraised value of public or state lands for which flowage rights are required with the present upper limiting elevation of Namakan lake at 1,120.11 (508.5 D. P. W. datum).

3. A statement of any claims pending on your part against the owners of the dam at the outlet of Rainy lake and the dams at the outlets of Namakan lake for flowage or other causes relating to the levels of Rainy and Namakan lakes.

4. If available, a statement of extent and appraised value of public or state lands which would be affected by an increase in level, (a) on Rainy lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61; (b) On Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11; (c) on boundary waters above Namakan lake if held at high water mark or five feet above such elevation.

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It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

Wm. H. SMITH, *Secretary.*

STATE OF MINNESOTA,
LEGAL DEPARTMENT,
St. Paul, June 10, 1925.

In re: Flowage of State lands on international boundary waters

Mr. WILLIAM H. SMITH,

Secretary, International Joint Commission, Washington, D. C.

DEAR SIR: Your favor of May 19, addressed to Attorney General Clifford L. Hilton, has been referred to me for attention.

You submit certain questions requesting information as follows:

"1. A statement in detail of appraised value of public or state lands under your jurisdiction for which flowage rights are required with the present upper limiting elevation of Rainy lake at 1,108.61 sea level datum (497.0 D. P. W. datum)."

Exhibit "A" attached contains an approximate and tabulated estimate of value of lands and timber owned by the State of Minnesota in Rainy lake and Rat Root river district, flooded and destroyed or damaged by water at levels stated. Our surveys and estimates were made and contour lines run on the basis of water levels as stated in exhibit "A" and we have not at hand estimates below 498.

Exhibit "B" attached contains the details upon which the tabulations in Exhibit "A" were based, in 1922, by adding 25% to the earlier estimates.

The values were originally estimated as of a date shortly following the construction of the dam at International Falls-Fort Frances, and have materially increased since that date, subject to damage by flowage for which claims are pending.

"2. A statement in detail of appraised value of public or state lands for which flowage rights are required with the present upper limiting elevation of Namakan lake at 1,120.11 (508.5 D. P. W. datum)."

Exhibit "C" attached contains an approximate and tabulated estimate of value of lands and timber owned by the State of Minnesota in Kettle falls (Namakan lake) district, flooded and destroyed by water at levels stated.

Exhibit "D" attached contains the details upon which the tabulation in Exhibit "C" were based, as to the lands described therein and on which we had more or less detailed estimates. The values were originally estimated as of a date shortly following the construction of the dam at Kettle falls. and Exhibit "C," made in 1922, is based upon such original estimates, with the addition of 25%, and with the further addition of a general estimate covering acreage within the contour lines in 67-16, 67-17, 68-17, 69-18 and 69-19, not included in Exhibit "D," and not covered in statement to the International Joint Commission, made in 1916. Values have materially increased since original estimates, and since 1922, subject to damage by flowage for which claims are pending.

"3. A statement of any claims pending on your part against the owners of the dam at the outlet of Rainy lake and the dams at the outlets of Namakan lake for flowage or other cause relating to the levels of Rainy and Namakan lakes."

Actions in which the State of Minnesota is plaintiff are pending against the Minnesota and Ontario Power Company, a corporation, as follows:

In Rainy lake and Rat Root river district:

(a) For recovery of damages by flowage prior to on or about May 29, 1914, \$200,000.

(b) For recovery of damages by flowage from May 29, 1914, to on or about March 30, 1917, \$25,000.

In Kettle falls (Namakan lake) district: For recovery of damages by flowage prior to on or about March 30, 1917, \$50,000.

"4. If available, a statement of extent and appraised value of public or state lands which would be affected by an increase in level, (a) on Rainy lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61; (b) On Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11; (c) on boundary waters above Namakan lake if held at high water mark or five feet above such elevation."

We have not available data to answer this inquiry other than above. The statement to the International Joint Commission made in 1916 may contain some information along that line.

"5. If for a flowage easement for storage purposes full appraised value of lands is not required, then on what terms can such flowage be secured?"

The state constitution requires state lands to be sold at an appraised price, but in any event at not less than \$5.00 per acre, in addition to the value of the timber thereon. I can not answer this inquiry further at this time.

Yours very truly,

ALBERT F. PRATT,
Assistant Attorney General.

LEVELS OF RAINY LAKE AND TRIBUTARY WATERS

EXHIBIT "A"

Approximate estimate of value of lands and timber owned by State of Minnesota in Rainy lake and Rat Root river district, flooded and destroyed or damaged by water at levels stated

LEVEL 498

No. of Acres Flooded	Value	Value Timber	Totals
5989.....	\$34,111.00	\$690.00	\$34,801.00
LEVEL 499			
6290.....	\$36,490.00	\$810.00	\$37,300.00
LEVEL 500			
7025.....	\$40,127.00	\$1,625.00	\$41,752.00
Add for acreage damaged by destruction of drainage and otherwise injuriously affected			
3129.....	\$17,022.00	-----	\$17,022.00
Estimated maximum total.....			58,774.00

CLIFFORD L. HILTON,
Attorney General.
By ALBERT F. PRATT,
Assistant Attorney General.

EXHIBIT "B"

Lands belonging to State of Minnesota—Rainy lake and Rat Root river districts

LEVEL 498

Plat No.	Sec.	T.	R.	No. of Acres Flooded	Value per Acre	Total Value	Value Timber
1.....	8	70	20	10	\$6.	\$60.	-----
2.....	9	70	20	12	6.	72.	-----
3.....	16	70	20	18	6.	108.	-----
4.....	32	71	21	86	5.	430.	-----
5.....	35	71	21	10	5.	50.	-----
6.....	36	71	21	86	5.	430.	-----
7.....	4	70	22	58	7.	406.	-----
8.....	5	70	22	40	6.	240.	-----
8.....	5	70	22	132	5.	660.	-----
9.....	7	70	22	314	5.	1,570.	\$50.
10.....	8	70	22	165	6.	990.	-----
11.....	10	70	22	44	6.	264.	-----
12.....	11	70	22	255	5.	1,275.	50.
13.....	12	70	22	446	5.	2,230.	25.
14.....	13	70	22	80	5.	400.	-----
14.....	13	70	22	280	7.	1,960.	-----
15.....	14	70	22	32	5.	160.	-----
16.....	15	70	22	58	6.	348.	-----
17.....	16	70	22	3	5.	15.	-----
18.....	18	70	22	232	6.	1,392.	50.
19.....	19	70	22	32	5.	160.	-----
20.....	22	70	22	23	5.	115.	-----
21.....	23	70	22	15	6.	90.	-----
22.....	30	70	22	8	6.	48.	-----
23.....	33	71	22	37	5.	185.	-----
24.....	2	69	23	20	5.	100.	-----
25.....	3	69	23	268	7.	1,876.	-----
26.....	4	69	23	300	7.	2,100.	-----
27.....	9	69	23	-----	-----	-----	-----
28.....	10	69	23	3	7.	21.	-----
29.....	11	70	23	40	5.	200.	-----
30.....	12	70	23	210	5.	1,050	50.
31.....	13	70	23	300	5.	1,500.	-----
32.....	14	70	23	64	5.	320.	25.
33.....	23	70	23	30	7.	210.	-----
34.....	24	70	23	347	7.	2,429.	-----
35.....	25	70	23	4	5.	20.	-----
36.....	33	70	23	155	6.	930.	-----
37.....	34	70	23	275	5.	1,375.	300.
38.....	33	70	23	294	5.	1,470.	-----
39.....	36	70	23	-----	-----	-----	-----
40.....	36	71	23	5	6.	30.	-----
Totals.....	-----	-----	-----	4,791	-----	27,289.	550.

Lands belonging to State of Minnesota—Rainy lake and Rat Root river districts—Continued

LEVEL 499

Plat No.	Sec.	T.	R.	No. of Acres Flooded	Value per Acre	Total Value	Value Timber
1.....	8	70	20	11	\$6.	\$66.	.....
2.....	9	70	20	12	6.	72.	.....
3.....	16	70	20	19	6.	114.	.....
4.....	32	71	21	86	5.	430.	.....
5.....	35	71	21	11	5.	55.	.....
6.....	36	71	21	87	5.	435.	.....
7.....	4	70	22	58	7.	406.	.....
8.....	5	70	22	40	6.	240.	.....
8.....	5	70	22	135	5.	675.	.....
9.....	7	70	22	320	5.	1,600.	\$50.
10.....	8	70	22	165	6.	990.	.....
11.....	10	70	22	44	6.	264.	.....
12.....	7	70	22	260	5.	1,300.	50.
13.....	12	70	22	449	5.	2,245.	25.
14.....	13	70	22	80	5.	400.	.....
14.....	13	70	22	281	7.	1,967.	.....
15.....	14	70	22	32	5.	160.	.....
16.....	15	70	22	58	6.	348.	.....
17.....	16	70	22	4	5.	20.	.....
18.....	18	70	22	240	6.	1,440.	50.
19.....	19	70	22	83	5.	415.	.....
20.....	22	70	22	24	5.	120.	.....
21.....	23	70	22	16	6.	96.	.....
22.....	30	70	22	22	6.	132.	.....
23.....	33	71	22	38	5.	190.	.....
24.....	2	69	23	30	5.	150.	.....
25.....	3	69	23	320	7.	2,240.	.....
26.....	4	69	23	320	7.	2,240.	.....
27.....	9	69	23	.....	.....	.....	.....
28.....	10	69	23	13	7.	91.	.....
29.....	11	70	23	41	5.	205.	.....
30.....	12	70	23	212	5.	1,060.	50.
31.....	13	70	23	320	5.	1,600.	.....
32.....	14	70	23	67	5.	335.	25.
33.....	23	70	23	58	7.	406.	.....
34.....	24	70	23	355	7.	2,485.	.....
35.....	25	70	23	4	5.	20.	.....
36.....	33	70	23	198	6.	1,188.	.....
37.....	34	70	23	290	5.	1,450.	300.
38.....	35	70	23	300	5.	1,500.	100.
39.....	36	70	23	.....	.....	.....	.....
40.....	36	71	23	7	6.	42.	.....
Totals.....	.....	.....	.....	5,110	.....	29,192.	650.

Lands belonging to State of Minnesota—Rainy lake and Rat Root river district—
Continued

LEVEL 500

Plat No.	Sec.	T.	R.	No. of acres Flooded	Value per Acre	Total Value	Value Timber
1.....	8	70	20	12	\$6.	\$72.	.....
2.....	9	70	20	13	6.	78.	.....
3.....	16	70	20	20	6.	120.	.....
4.....	32	71	21	88	5.	440.	.....
5.....	35	71	21	13	5.	65.	.....
6.....	36	71	21	89	5.	445.	.....
7.....	4	70	22	58	7.	406.	.....
8.....	5	70	22	40	6.	240.	.....
8.....	5	70	22	138	5.	690.	.....
9.....	7	70	22	325	5.	1,625.	\$50.
10.....	8	70	22	165	6.	990.	.....
11.....	10	70	22	45	6.	270.	.....
12.....	11	70	22	264	5.	1,320.	50.
13.....	12	70	22	454	5.	2,270.	25.
14.....	13	70	22	80	5.	400.	.....
14.....	13	70	22	282	7.	1,974.	.....
15.....	14	70	22	32	5.	160.	.....
16.....	15	70	22	58	6.	340.	.....
17.....	16	70	22	6	5.	30.	.....
18.....	18	70	22	252	6.	1,512.	50.
19.....	19	70	22	222	5.	1,110.	700.
20.....	22	70	22	25	5.	125.	.....
21.....	23	70	22	17	6.	102.	.....
22.....	30	70	22	40	6.	240.	.....
23.....	33	71	22	40	5.	200.	.....
24.....	2	69	23	48	5.	240.	.....
25.....	3	69	23	340	7.	2,380.	.....
26.....	4	69	23	360	7.	2,520.	.....
27.....	9	69	23	15	7.	105.	.....
28.....	10	69	23	40	7.	280.	.....
29.....	11	70	23	42	5.	210.	.....
30.....	12	70	23	217	5.	1,085.	50.
31.....	13	70	23	345	5.	1,725.	.....
32.....	14	70	23	73	5.	365.	25.
33.....	23	70	23	71	7.	497.	.....
34.....	24	70	23	366	7.	2,562.	.....
35.....	25	70	23	6	5.	30.	.....
36.....	33	70	23	275	6.	1,650.	.....
37.....	34	70	23	310	5.	1,550.	300.
38.....	35	70	23	325	5.	1,625.	100.
39.....	36	70	23	.....	.....	.....	.....
40.....	36	71	23	9	6.	54.	.....
Totals.....	.....	.....	.....	5,620	.....	32,102.	1,350.

Statement showing lands in the Rainy lake and Rat Root river territory belonging to the State and that are damaged by reason of not being able to drain

Sec.	T.	R.	No. Acres	Value per Acre	Total Value
8.....	70	20	5	\$6.	\$30.
9.....	70	20	8	6.	48.
16.....	70	20	5	6.	30.
32.....	71	21	10	5.	50.
35.....	71	21	22	5.	110.
36.....	71	21	50	5.	250.
5.....	70	22	70	6.	420.
7.....	70	22	14	5.	70.
10.....	70	22	25	5.	125.
11.....	70	22	55	5.	275.
12.....	70	22	34	5.	170.
18.....	70	22	110	6.	660.
19.....	70	22	380	5.	1,900.
30.....	70	22	175	6.	1,050.
32.....	71	22	10	5.	50.
2.....	69	23	403	5.	2,015.
4.....	69	23	85	7.	595.
9.....	69	23	180	7.	1,260.
10.....	69	23	37	7.	259.
11.....	70	23	220	5.	1,100.
12.....	70	23	300	5.	1,500.
13.....	70	23	125	5.	625.
14.....	70	23	120	5.	600.
23.....	70	23	90	7.	630.
24.....	70	23	70	7.	490.
25.....	70	23	190	5.	950.
33.....	70	23	125	5.	625.
34.....	70	23	47	5.	235.
35.....	70	23	84	5.	420.
36.....	70	23	80	6.	480.
			3,129		17,022.

EXHIBIT "C"

Approximate estimate of value of lands and timber owned by State of Minnesota in Kettle Falls district flooded and destroyed or damaged by water at levels stated

LEVEL 510

	No. of Acres Flooded	Value	Value Timber	Totals
Additional for land and timber damaged by destruction of drainage or otherwise at level 510.....	3,940	\$20,929.00	\$2,825.00	\$23,754.00
Totals.....	2,843	14,217.00	2,937.00	17,154.00
	6,783	35,146.00	5,762.00	40,908.00

(To this may be added acreage in 67-16, 67-17, 68-17, 69-18 and 69-19, shown below.)

Approximate estimate of value of lands and timber owned by State of Minnesota in Kettle Falls district flooded and destroyed or damaged by water at levels stated—Continued

LEVEL 515

Additional for lands and timber damaged by destruction of drainage or otherwise at level 515.....	7,448	\$34,651.00	\$9,150.00	\$43,801.00
	8,821	48,593.00	4,593.00	53,186.00
Totals.....	16,269	83,244.00	13,743.00	96,987.00
Additional for acreage in 67-16, 67-17, 68-17, 69-18, 69-19, not covered in statement to International Joint Commission in 1916.....	3,446.97	17,234.85		17,234.85
Estimated Maximums.....	19,715.97	100,478.85	13,743.00	114,221.85

CLIFFORD L. HILTON,
Attorney General.
By ALBERT F. PRATT,
Assistant Attorney General.

EXHIBIT "D"

Lands belonging to State of Minnesota—Kettle Falls district

Plat No.	Sec.	T.	R.	Level 510				Level 515				
				No. Acres Flooded	Value per Acre	Total Value	Value Timber	No. Acres Flooded	Value per Acre	Total Value	Value Timber	
1.....	4	68	20									
2.....	5	"	"	185	\$5.	\$925.00	\$150.	388	\$5.	\$1,940.00	\$500	
3.....	6	"	"	125	5.	625.00	385.	188	5.	940.00	685.	
4.....	7	"	"					76	5.	380.00	800.	
5.....	8	"	"	80	5.	400.00	800.	160	5.	800.00	1,850.	
6.....	9							200	5.	1,000.00	640.	
7.....	30	69	"	79	5.	395.00						
8.....	31	"	"	32	5.	160.00						
9.....	32	"	"	220	5.	1,100.00	100.	245	5.	1,225.00	220	
10.....	1	"	21					10	5.	50.00		
11.....	7	"	"	29	5.	145.00	50.	29	5.	145.00	50	
12.....	8	"	"	55	5.	275.00	50.	55	5.	275.00	50	
13.....	12	"	"					5	5	25.00		
14.....	17	"	"	50	5	250.00	75.	58	5.	290.00	100.	
15.....	21	"	"	16	8.	128.00	50.	20	8.	160.00	50.	
16.....	22	"	"	7	10.	70.00	25.	8	10.	80.00	25.	
17.....	25	"	"	120	5.	600.00		124	5.	620.00		
18.....	26	"	"	140	7.	980.00		170	7.	1,190.00		
19.....	27	"	"	80	6.	480.00	200.	105	6.	630.00	300.	
20.....	35	"	"	190	7.	1,330.00		190	7.	1,330.00		
21.....	36	"	"	230	5.	1,150.00		235	5	1,175.00		
22.....	1	"	22	279	5.	1,395.00	50.	279	5.	1,395.00	50.	
23.....	2	"	"	300	5.	1,500.00	100	597	5.	2,985.00	100.	
24.....	3	"	"					260	5.	1,300.00	150.	
31.....	10	"	"					75	5	375.00	25.	
32.....	11	"	"	62.4	7.	436.80		624	7.	436.80		
32.....	11	"	"	57.6	5.	288.00	75.	147.6	5.	738.00	75.	
33.....	12	"	"	23	7.	161.00		23	7.	161.00		
47.....	34	70	22					335	5.	1,675.00	1,200.	
48.....	35	"	"	150	5.	750.00	75.	640	5.	3,200.00	375.	
49.....	36	"	"	640	5.	3,200.00	75.	640	5.	3,200.00	75.	
Totals.....				3,150		16,743.80	2,260.	5,886.6		27,720.80	7,320.	

Lands belonging to State of Minnesota—Kettle Falls district—Continued

Plat No.	Sec.	T.	R.	If Level 510 is considered			If Level 515 is considered			
				No. Acres damaged by not being able to drain	Total Value	Value Timber	No. Acres damaged by not being able to drain	Total Value	Value Timber	
1	4	68	20	152.72	\$5.	\$763.60	\$500.			
24	3	69	22	350.	5.	1,750.	300.			
25	4	"	"	622.	5.	3,110.	550.			
26	5							638	\$5.	\$3,190.
27	6							678	5.	3,380.
28	7							364	5.	1,820.
29	8							640	5.	3,200.
30	9	"	"	640.	5.	3,200.				
31	10	"	"	325.	5.	1,625.				
34	17	"	"					240	5.	1,200.
35	18	"	"					80	5.	400.
36	17	70	22					200	5.	1,000.
37	18	"	"					160	5.	800.
38	19	"	"					440	5.	2,200.
39	20	"	"					640	5.	3,200.
40	21	"	"					160	5.	800.
41	28	"	"					80	5.	400.
42	29	"	"					560	5.	2,800.
43	30	"	"					38	6.	228.
43	30	"	"					532	5.	2,660.
44	31	"	"					527	5.	2,635.
45	32	"	"					640	5.	3,200.
46	33	"	"					440	5.	2,200.
47	34	"	"	185.	5.	925.	1,000.			
Totals				2,274.72		11,373.60	2,350.	7,057		35,315.

MAY 19, 1925.

THE AUDITOR, STATE OF MINNESOTA,

St. Paul, Minn.

SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A statement in detail of appraised value of public or state lands under your jurisdiction for which flowage rights are required with the present upper limiting elevation of Rainy lake at 1,108.61 sea level datum (497.0 D. P. W. datum).

2. A statement in detail of appraised value of public or state lands for which flowage rights are required with the present upper limiting elevation of Namakan lake at 1,120.11 (508.5 D. P. W. datum).

3. A statement of any claims pending on your part against the owners of the dam at the outlet of Rainy lake and the dams at the outlets of Namakan

lake for flowage or other causes relating to the levels of Rainy and Namakan lakes.

4. If available, a statement of extent and appraised value of public or state lands which would be affected by an increase in level, (a) on Rainy lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61; (b) on Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11; (c) on boundary waters above Namakan lake if held at high water mark or five feet above such elevation.

5. If for a flowage easement for storage purposes full appraised value of lands is not required, then on what terms can such flowage be secured?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

(Letters similar to the above were sent to William Spry, Esq., Commissioner, General Land Office, Department of the Interior, Washington, D. C., and W. B. Greeley, Forester and Chief, Department of Agriculture, Washington.)

UNITED STATES DEPARTMENT OF THE INTERIOR,
GENERAL LAND OFFICE,
Washington, June 10, 1925.

MR. WILLIAM H. SMITH,
Secretary International Joint Commission, Washington, D. C.

MY DEAR SIR: By your letter of May 19, 1925, you request that you be furnished information to be used in connection with a report on certain questions regarding the level of Rainy lake and the boundary waters flowing into and from that lake.

Upon a thorough search of the records in this office it appears that it will be impracticable to furnish you with the desired information as there is no data upon which to base such a report. It is suggested, however, that the office of the Chief of Engineers of the War Department may be able to give you some helpful information on the subject.

Very respectfully,

THOS C. HAVELL,
Assistant Commissioner.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,
Washington, May 22, 1925.

MR. WM. H. SMITH,
Secretary International Joint Commission, Washington, D. C.

DEAR SIR: Reference is made to your letter of May 19 making inquiry on behalf of the International Joint Commission respecting the value of public or state lands which may be overflowed by reason of changing the elevation of Rainy and Namakan lakes.

I am referring a copy of your letter to the District Forester at Denver, Col., under whose general supervision the Superior national forest lies, and am

asking him to submit any comments he may care to make on your inquiries, particularly with respect to the question whether the changing of the level of these lakes may have any effect on lands under the jurisdiction of the Forest Service. I hope his reply can be sent to you before June 10.

Very truly yours,

L. F. KNEIPP, *Acting Forester.*

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE.

Washington, June 5, 1925.

Mr. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: Further reference is made to your letter of May 19 relating to the overflow on public lands through the change in the level of Rainy and Namakan lakes.

The District Forester at Denver reports that much of the information desired cannot be secured without a pretty careful study on the ground. He points out, however, that the present dam at Kettle falls at the outlet of Namakan lake overflows about 34 acres of national forest land in lot 1 of section 34, township 67 north, range 16 west, 4th p. m. It is quite likely that in case there is a further increase in height of the dam at the outlet of Namakan lake that additional forest lands will be flooded but the area, of course, cannot be determined without a very careful survey.

It is our general understanding that the construction of other dams at the outlet of lakes along the international boundary in this general region is contemplated. If such dams are constructed, without question national forest lands will be flooded.

I take it that in case federal lands are involved in the construction of any power projects along the international boundary that the usual permits would have to be obtained from the Federal Power Commission. The Forest Service undoubtedly would urge that the United States should be adequately compensated for such national forest properties as are rendered unproductive by reason of flooding the lands.

Should the District Forester at Denver submit any further information which it is found would be valuable to the International Joint Commission, this will be forwarded to you. If there are any further specific questions which you desire answered and the Forest Service is able to do so, it will, of course, gladly cooperate with you to the end that the Commission may be as fully advised as possible.

Very truly yours,

L. F. KNEIPP, *Acting Forester.*

UNITED STATES DEPARTMENT OF AGRICULTURE,
FOREST SERVICE,

Washington, June 30, 1925.

Mr. WILLIAM H. SMITH,

Secretary, International Joint Commission, Washington, D. C.

DEAR SIR: Since replying on June 5 to your letter of May 19 relating to the overflow of public lands through the change in the level of Rainy and Namakan lakes, we have received copies of a letter submitted to the District Forester

by the Supervisor of the Superior national forest under date of June 6 which contains all of the information now available to the Forest Service with reference to the subject.

Our inability to give categorical replies to the several specific questions contained in your letter of May 19 is deeply regretted but appears unavoidable. It therefore is hoped that the more or less general statements made by the supervisor will be sufficient for the present. If more detailed or specific data later becomes desirable, the Forest Service will gladly cooperate in securing them so far as its limitations will permit.

Very truly yours,

L. F. KNEIPP, *Acting Forester.*

ELY, MINN., *June 6, 1925.*

DISTRICT FORESTER,

Denver, Colo.

DEAR SIR: Your letter of May 27th with enclosures is received.

It seems to me that you have covered the situation pretty well in your letter of May 29th to the Forester and I am able to add very little to the information already given. You are correct in assuming in question No. 1 that no national forest land is affected. Question No. 2 involves an appraisal of the soil value of the 33.69 acres mentioned in the trespass case. This is the only national forest land affected by the flowage from the present dam at Kettle falls on Namakan lake. We have no precedent to establish a value of this land, but it is of low value for timber production, a large part of it being hay meadow on the river and the balance small popple and birch. I should place the soil value of this not to exceed \$1.00 per acre.

We have only one claim pending against the owners of the dams at Namakan lake, which is the trespass case above referred to. While small amounts overflow throughout the length of Loon river with the water held at the present limiting level of 1120 sea level datum, this land is of small area and involves sloping shores of Loon river. In my opinion, this may be entirely disregarded in any claim against the owners of the dam.

Question No. 4 is so comprehensive in its scope that it would be impossible to give any specific data without a very extensive survey. Elevations on Rainy lake cannot affect national forest land. On Namakan lake the present limiting level of 1,120 does not involve much land except as mentioned above, but each additional two feet of elevation would spread out considerably over some of the lower lands. I should say offhand without any data to base this estimate on that an additional head of 8 feet would overflow some four or five hundred acres on the American side. A much larger acreage would be under flowage on the Canadian side.

So far as boundary waters above Namakan lake are concerned, this would have to include all of the river and lake system from Sand Point to Big Saganaga. Obviously, we cannot even guess at the acreage involved for each two foot elevation above the present high water mark or five feet above such elevation. In general, however, the shores of the boundary lakes are rather steep and rocky and I should imagine that holding water at the present high water level would not affect any great amount of government land. Five feet above such elevation would begin to back into the streams and undoubtedly overflow some of the swampy lands bordering on the lakes. Between Loon lake and Basswood falls I should say offhand that a five foot elevation above

the high water elevation would probably overflow some two to five thousand acres of land, possibly one-half of which would be government land. From Basswood falls to Big Saganaga the boundary waters are entirely outside the forest and we have no record of ownership of state or public land inside this area. Raising Big Saganaga 5 feet above the high water level would undoubtedly involve some flowage, possibly one thousand acres of government land.

Question No. 5 is of course pertinent at this time in view of our discussion with Mr. Sherman for compensation of flowage. It seems to me that we would be justified in claiming the full appraised soil value of the lands in accordance with Mr. Sherman's suggestion. If we are able to obtain the soil value of the land and still retain control, so much the better, but I still am of the opinion, as suggested to Mr. Sherman, that if we can obtain the soil value of the land we are in effect consummating an exchange whereby additional land could be purchased with government funds to replace the lands lost by flowage and I see no particular reason why it might not be best to handle it on this basis. It looks rather difficult to me to expect and demand full soil value and still retain control. However, if it could be put over on this basis, it might be desirable to do so although the jurisdiction of the Federal Power Commission ought to insure handling public resources in a satisfactory manner.

I have reviewed the copy of the application made by the Fort Frances Pulp and Paper Company Ltd. to the Minister of Lands and Forests in Ontario and I question very much whether it would be advisable for the government to even consider tying up all the water power rights along the international boundary to one company. A few days ago I talked with one of the surveyors at Mr. Backus' camp on Loon river and he made the statement that Mr. Backus did not intend to start any construction on these projects, and in fact did not expect to have his application granted, but that the application was placed with the idea of heading off other applications against such a time as the demand for water power along the boundary would justify the joint commission in approving applications for power. He seems to think that this application will give him priority on all of these sites if they should ever be opened for exploitation and possibly he may be right in this. From the standpoint of forest service, however, I think we would be justified in holding at least some part of the boundary water development for use in connection with timber resources of the Superior. The project at Curtain falls, for instance, is located at a point where power could be developed if needed for a pulp plant, utilizing products from the La Croix Working Circle as well as from Canadian forests. On the other hand, if these projects are used only as storage to supply the power plant at International Falls and Fort Frances, too far removed from the forest to be used in connection with our supply of pulp wood, we might be in position of having operators unable to handle our pulp without nearby power. I believe this should be given consideration at this time before the Joint Commission is committed in any way to the application of Backus for the power projects covered in his application.

I am enclosing a small base map of the forest showing the location of the power projects in the application of Mr. Backus along boundary water. This will give you some idea of the scope of country in which he intends to claim the priority of application if the Joint Commission considers his application favorably in the future.

Very truly yours,

A. L. RICHEY,
Forest Supervisor.

MAY 19, 1925.

To E. W. BACKUS, Esq.,
St. Paul, Minn.
MINNESOTA & ONTARIO PAPER CO.,
International Falls, Minn.

By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A general statement as to the manner in which your interests would be affected by an increase of maximum level;

(a) on Rainy Lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61;

(b) on Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11;

(c) on boundary waters above Namakan lake if held at high water mark or five feet above such elevation.

2. What works or measures would be necessary for each of the above (to be accompanied, if possible, by plans of the works)?

3. What would be the estimated cost of each of such works or measures?

4. In order to secure the most advantageous use of the boundary waters affected by this reference what limiting elevations of upper and lower storage ranges do you consider most desirable?

5. What method or system of regulation would you suggest as feasible and advisable for the storage on Rainy lake, Namakan lake, and the upper boundary lakes, individually or collectively?

6. What method of administrative control do you suggest for the operation of the above storage reservoirs, individually or collectively?

7. What interests on each side of the boundary do you consider may be benefited by any or all of the above?

8. What, in your opinion, would be the nature and extent of such benefits to each of the above interests?

9. How do you consider the capital and annual costs of additional storage and regulation should be apportioned among the various interests you consider would be benefited by the above?

10. If you consider that additional storage on any or all of the above lakes should be provided, what is your opinion concerning your proportionate share of the costs?

11. Do you consider that local power development at the outlet of any of the above lakes would be consistent with the use for storage and/or regulation, if so, state your opinion as to what proportion of cost of the necessary works should be borne by the local power interest?

I. Rainy lake (present storage range)

(A) What are the upper and lower levels of the present storage range and by what authority?

Copies of any state or federal authorization are desired.

(B) What has been the capital cost of providing the present storage under the following heads:

(NOTE.—As the dam by which the present storage is controlled is a combined power and storage dam, it will be necessary to carefully apportion the cost of the structure as between its use for the respective purposes of developing power and for the regulation of storage.)

(1) Storage Structures.

Give in detail the total capital cost of the storage structures, apportioning the cost of the dam as between cost for power purposes and for storage purposes respectively, and giving the costs in as much detail as possible.

Capital cost should not include any damages which may have arisen through non-acquisition of flowage easements or storage rights in the first instance.

(2) Flooded lands, easements, etc., etc.

Under this head list the parcels, acreage, and former ownership of lands flooded or otherwise required for storage purposes, together with the value of, or amounts paid for the same.

If there be any litigation pending as to settlement for flowage on lands give a tabulated statement setting forth details of such claims.

(3) Other miscellaneous storage costs.

List and give in detail with full explanations any other capital costs which have entered into the development or maintenance of the present storage range in Rainy lake.

(C) What has been the operating and maintenance cost of the present storage to date, under the following heads:

(1) Storage Structures.

Give in detail a complete statement of the operating and maintenance cost of the storage structures to date, apportioned as between what is chargeable to power and what to storage.

(2) Other miscellaneous storage costs.

List and give in detail with full explanations, any other costs which have entered into the operation or maintenance of the present storage range in Rainy lake.

(D) What interests on each side of the boundary do you consider as being benefited by the present storage?

(E) What in your opinion are the nature and extent of such benefits to each interest listed in (D)?

(F) How do you consider the capital cost of the present storage, as determined in (C) should be apportioned among the interests listed as benefiting in (D)?

(G) How do you consider the annual costs of the present storage should be apportioned among the interests you consider as benefiting therefrom?

II. Namakan lake. (Present storage range)

(A) What are the upper and lower levels of the present storage range and by what authority?

Copies of any state or federal authorization are desired.

(B) What has been the capital cost of providing the present storage under the following heads:

(1) Storage structures.

Give in detail the total capital cost of the storage structures.

Capital costs should not include any damages which may have arisen through non-acquisition of flowage easements or storage rights in the first instance.

(2) Flooded lands, easements, etc.

Under this head list the parcels, acreage and former ownership of lands flooded or otherwise required for storage purposes, together with the value of, or amounts paid for the same.

If there be any litigation pending as to settlement for flowage on lands, give a tabulated statement setting forth details of such claims.

(3) Other miscellaneous storage costs.

List and give in detail, with full explanations, any other capital costs which have entered into the development or maintenance of the present storage range in Namakan lake.

(C) What has been the operating and maintenance cost of the present storage to date under the following heads:

(1) Storage structures.

Give in detail a complete statement of the operating and maintenance cost of the present storage structures to date.

(2) Other miscellaneous storage costs.

List and give in detail, with full explanations, any other costs which have entered into the operation or maintenance of the present storage range in Namakan lake.

(D) What interests on each side of the boundary do you consider as being benefited by the present storage?

(E) What in your opinion are the nature and extent of such benefits to each interest listed in (D)?

(F) How do you consider the capital cost of the present storage, as determined in (B) should be apportioned among the interests listed as benefiting in (D) above?

(G) How do you consider the annual costs of the present storage should be apportioned among the interests as benefiting therefrom?

It is respectfully requested that, if possible, answers to these questions be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impossible to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

(The foregoing questions, submitted to Mr. Backus and the Minnesota & Ontario Paper Co., were also submitted by Secretary Burpee to the Ontario & Minnesota Power Co., at Fort Frances, Ont., and a reply thereto, identical in substance with the following, was received from Mr. Birkelund.)

MINNEAPOLIS, MINN., June 6, 1925.

MR. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: We desire to acknowledge receipt of your letter of May 19th addressed to our International Falls office. The papers were held there for some time, which explains the delay in acknowledgment.

The matter will require careful consideration in order to answer your inquiry intelligently, but we will go into it at once and you may expect to hear from us again with answers the end of this month.

Yours very truly,

MINNESOTA AND ONTARIO PAPER CO.
G. R. BIRKELUND.

MAY 19, 1925.

Honorable CHARLES H. BURKE,

Commissioner of Indian Affairs, Washington, D. C.

DEAR SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

(1) A general statement as to the manner in which your interests would be affected by an increase of maximum level (a) on Rainy lake for each foot above elevation of 1,108.61 (497.0 D. P. W. datum) to elevation 1,112.61; (b) on Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11.

(2) What protective works or measures would be necessary for the above (to be accompanied, if possible, by plans of the required works).

(3) What would be the estimated cost of such protective works or measures?

(4) A statement as to the effect on any Indian lands if the boundary waters above Namakan lake are held at high water mark, or five feet above such elevation, together with an estimate of the cost of such protective works, or of such compensation to the Indians, as might appear necessary.

(5) Have you any interest in the method of control of these levels and if so what?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

UNITED STATES DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, June 2, 1925.

Mr. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

MY DEAR MR. SMITH: This will acknowledge receipt of your letter of May 19th concerning proposed regulation of the waters of Rainy and Namakan lakes which will affect international rights of the United States and the Dominion of Canada.

These lakes are not within or adjacent to any established Indian reservations. No tribal Indian rights are therefore involved. It is probable, however, that there are individual Indians residing within the immediate vicinity of the lakes mentioned, whose rights may be affected by the proposed regulation of

the waters. For this reason we will endeavor to obtain information regarding the number of, location, and probable interests of the Indians concerned and will advise you fully at a later date.

Very truly yours,

CHAS. H. BURKE, *Commissioner.*

MAY 19, 1925.

MINNESOTA STATE FISH AND GAME COMMISSIONER,

St. Paul, Minn.

DEAR SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A general statement as to the manner in which fishing would be affected by an increase in maximum level, (a) of one, two, three or four feet on Rainy lake above elevation 1,108.61 (497 D. P. W. datum); (b) of two, four, six and eight feet on Namakan lake above elevation 1,120.11 (508.5 D. P. W. datum.)

2. In what way or manner would a seasonal fluctuation in water level affect the fishing and what is the maximum range in levels which might be permitted in any one year without undue injury to fishing?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

The Commission would appreciate a list of names and addresses of licensed commercial fishermen on Rainy, Namakan and other border lakes, except Lake of the Woods, to whom the above questions could be sent.

Very respectfully,

WM. H. SMITH, *Secretary.*

(A letter similar to the above was sent to representative of the Izaak Walton League, St. Paul, Minn.)

MAY 19, 1925.

VIRGINIA AND RAINY LAKE LUMBER COMPANY,

Virginia, Minn.

GENTLEMEN: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the level of Rainy Lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A general statement as to the manner in which your interests would be affected by an increase in maximum level, (a) of one, two, three or four feet on Rainy Lake above elevation 1,108.61 (497 D. P. W. datum); (b) of two, four, six and eight feet on Namakan lake above elevation 1,120.11 (508 D. P. W. datum).

2. What in your opinion is the extreme limit to which Rainy and Namakan lakes could be lowered without undue injury to your interests?

3. What would be the estimated cost of protective works or measures to obviate or effect increases of stage mentioned above?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

ST. PAUL, MINN., *May 27, 1925.*

Mr. WM. H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: The Virginia & Rainy Lake Lumber Company and Shevlin Clarke Company, Limited, are clients of ours, and we will look after their interests in connection with the questions that have been referred to the Joint Boundary Commission as per the letter of the Department of State under date of February 27, 1925.

In your letter to the Virginia & Rainy Lake Company under date of May 19th you ask for certain information on or before June 10, 1925, and if that date is found impracticable that we name some other date within which such information can be supplied.

This letter was the first information received by this company that the Joint Commission had undertaken to investigate the question outlined in Secretary Hughes' letter. The Virginia & Rainy Lake Company has not fortified itself with information which it can supply to the Commission within the time stated, and the same can be said for the Shevlin Clarke Company, Limited.

Since the Commission will hold hearings upon the general questions which have been submitted, would it not be satisfactory to the Commission to have us prepare testimony and present it to the Commission by witnesses? Our interests are extensive throughout the northern region and we are inclined to the opinion that the adoption of this course will be better for all parties concerned. We desire to accommodate the Commission in every way consistent with our own interests.

Will you kindly advise about when the hearings upon the general questions may be expected, and where they will be held.

I am leaving for my vacation next week and will be in the east during all of the month of June.

Yours very truly,

CHARLES E. ELMQUIST,
MS.

STATE OF MINNESOTA,
DEPARTMENT OF DRAINAGE AND WATERS,
St. Paul, May 21, 1925.

SECRETARY INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

DEAR SIR: The department has unofficial information to the effect that a hearing is to be held at Fort Frances, Ontario, Canada, on the subject matter of the water levels in Rainy lake and is receiving inquiries about this hearing from interested parties. The department knows nothing of such a hearing and would appreciate very much authentic information regarding same.

If a hearing is to be had on the subject of a public nature, will you be kind enough to wire that fact to me on receipt of this letter?

Very truly yours,

E. V. WILLARD, *Commissioner.*

WASHINGTON, *May 25, 1925.*

MR. E. V. WILLARD,
*Commissioner Department of Drainage and Waters,
Old State Capitol, St. Paul, Minn.*

DEAR SIR: Upon receipt of your letter of the 21st instant I wired you as follows: "Hearing will undoubtedly be held at some future date not yet determined upon by Commission. Letter follows."

In further reply I beg to say that questions touching the levels of Rainy lake and other boundary waters have been referred to the International Joint Commission of the Governments of the United States and Canada for investigation and report. I enclose copy of the questions so referred.

At a session of the Commission held at Montreal on May 15-16 last in connection with another matter, the engineers appointed by the respective governments in the Rainy lake investigation suggested certain questions to be propounded to various interests concerned in the levels of these waters, the replies to which questions it was anticipated would be of assistance to the Commission in perfecting plans for the conduct of the investigation. A list of questions has been sent to the Governor of Minnesota and to the Attorney General and the Auditor. Copy of these questions is enclosed herewith.

It is hardly to be expected that you can reply to these questions in detail by the 10th of June, but a statement from you as to the time when it is thought replies might be sent to the Commission will be appreciated.

There has been published in the Pioneer Press, of May 22nd, a preliminary notice regarding this Rainy lake reference wherein it is stated that public hearings will be held at some future date to be fixed by the Commission. If you can suggest names and addresses of interested parties to whom you think notices of hearings should be sent, I will be greatly obliged if you will be good enough to send them to me.

Very truly yours,

WM. H. SMITH, *Secretary.*

[Inclosure]

1. A statement in detail of appraised value of public or state lands under your jurisdiction for which flowage rights are required with the present upper limiting elevation of Rainy lake at 1,108.61 sea level datum (497.0 D. P. W. datum).

2. A statement in detail of appraised value of public or state lands for which flowage rights are required with the present upper limiting elevation of Namakan lake at 1,120.11 (508.5 D. P. W. datum).

3. A statement of any claims pending on your part against the owners of the dam at the outlet of Rainy lake and the dams at the outlet of Namakan lake for flowage or other cause relating to the levels of Rainy and Namakan lakes.

4. If available, a statement of extent and appraised value of public or state lands which would be affected by an increase in level, (a) on Rainy lake for each foot above elevation 1,108.61 (497 D. P. W. datum) to elevation 1,112.61; (b) on Namakan lake for each two feet above elevation 1,120.11 (508.5 D. P. W. datum) to elevation 1,128.11; on boundary waters above Namakan lake if held at high water mark or five feet above such elevation.

5. If for a flowage easement for storage purposes full appraised value of lands is not required, then on what terms can such flowage be secured?

WASHINGTON, May 19, 1925.

The TOWN CLERK,
Ranier, Minn.

DEAR SIR: By joint reference from the Governments of the United States and the Dominion of Canada, there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding the levels of Rainy lake and of the boundary waters flowing into and from that lake. Copy of the reference containing the said questions is hereto attached.

In connection with this examination or investigation the Commission desires to secure certain information which it is hoped you can supply. By direction of the Commission, I submit the following questions covering the information desired:

1. A general statement as to the manner in which your interests would be affected by an increase of maximum level of Rainy lake for each foot above elevation 1,108.61 (497.0 D. P. W. datum) to elevation 1,112.61;

2. What protective works or measures would be necessary (to be accompanied, if possible, by plans of the required works).

3. What would be the estimated cost of such protective works or measures.

4. Have you any interest in the method of control and if so what?

It is respectfully requested that, if possible, answers to these questions may be received at the Washington office of the Commission on or before June 10, 1925. If it should be found impracticable to furnish detailed replies to these questions on or before June 10th, the Commission will appreciate receipt on or before that date of a statement as to the time when such replies can be furnished.

Very respectfully,

WM. H. SMITH, *Secretary.*

(Letters similar to the above were sent to the Town Clerk, International Falls, Minn., and the Town Clerk, Warroad, Minn.)

WARROAD, MINN., June 2, 1925.

Mr. WM. H. SMITH,
Secretary International Joint Commission, Washington, D. C.

DEAR SIR: With reference to your letter of May 29th, addressed to the Town Clerk, Warroad, and which was turned over to me for attention. I im-

mediately called together a committee appointed by Warroad Commercial Club who were to look after our interests re Lake of the Woods levels.

They are of the opinion that when regulating works as directed by the Commission under the system of international supervision and control were established that the Rainy lake levels would not affect us. However, I am sending a copy of your letter to our attorney Mr. C. E. Berkman of Chisholm, Minn., and have asked him to reply direct to you with a copy to me for our files. Thanking you for drawing my attention in regard to this matter and will be pleased to hear from you on any matter of the sort which may affect our interests on the Lake of the Woods.

Very respectfully,

HALVOR ROBBERTAD, *Village President.*

OTTAWA, *May 18, 1925.*

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

Sir HENRY THORNTON,
President, Canadian National Railways, Montreal.

[Inclosure]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with questions (1)a, and (2), would ask that a statement covering the following points be submitted:

- (1) A general statement as to the manner in which your interests would be affected by an increase of maximum level of Rainy Lake for each foot above elevation 1108.61 (497 D. P. W. datum) to elevation 1112.61.
- (2) What protective works or measures would be necessary (to be accompanied if possible by plans of the required works).
- (3) What would be the estimated cost of such protective works or measures?
- (4) Have you any interest in the method of control and if so, what?

STATEMENT BY CANADIAN NATIONAL RAILWAYS

In the matter of reference by the Governments of Canada and the United States to the International Joint Commission, of certain questions as to the use of the waters of Rainy lake and of the boundary waters flowing in and from this lake.

Answers of the Canadian National Railways to the questions submitted by the said Commission.

1. (a) The Canadian National Railways own a strip of land having approximately 2,380 feet of frontage on Rainy river immediately above the dam

at Fort Frances, which land would be endangered by a raise in elevation above 1,108.61, and would be submerged by elevation 1,111.61.

(b) The main lines of the Canadian National Railways lie adjacent to Rainy lake, on the Fort Frances subdivision for a distance of twenty-five miles, and on the Cusson subdivision for about a mile. Both lines would be dangerously affected if the level of the lake be raised as recommended in the final report of the International Joint Commission dated 1917, and seriously impaired if raised even one foot above the existing lake stage.

On these subdivisions there are three steel bridges affected, each having lift spans. These bridges will require to be elevated to meet any increase in water levels, to provide necessary clearances and protection.

2. (a) The protective works necessary to protect the lands mentioned in paragraph 1 (a) are the increasing of the height of the existing dyke and the said lands to a level corresponding with the increased elevation of the high water level.

(b) The protective works or measures necessary to protect the line of rails would be those set out in paragraph 2 (c) hereof, and in addition such other works as might be required by the Public Works to protect and preserve the rights of navigation on the waters affected by these works.

(c) Protective work necessary will involve the raising of the roadbed, ripping slopes, raising bridges, trestles, etc. at various points along the portions of the lines aforementioned.

For each foot above elevation 1,108.61 to which the maximum level of Rainy lake is raised it will be necessary to raise the subgrade so that the minimum vertical distance from the subgrade to water level is such that there will be equivalent protection to that which originally obtained.

3. (a) The estimated total cost at present prices of the protective work and measures described in paragraph 2 (c), and which require to be undertaken in order to preserve our roadway, if the water level be raised to elevation 1,111.61, would be \$732,540.00. The cost of adapting the roadbed for a water level raise other than that referred to would correspondingly increase or decrease the above amount. The submission of figures for each foot of raise would have to be determined by further investigation.

(b) The roadbed is partially prepared for double tracking, and double tracking will become necessary in the not far distant future, and the additional protective work which will be necessary is estimated to cost \$152,990.00, if done now.

4. (a) We are interested in the method of control to secure that the maximum level shall never exceed that provided for by the protective works, and that if the protective works should appear to provide an insufficient factor of safety against a long continuance of the maximum level means should be provided for the immediate reduction of that level to a point consistent with the safety of our roadway.

5. The Canadian National Railways will be further affected by the increased cost of maintaining their right-of-way over new embankments which are less firm and subside more than old embankments, and the railway will be subjected to the risk of other parts of its right-of-way being submerged or weakened by the said raise in levels. The amount of the increased cost of maintenance it is not now possible to compute.

Dated at Toronto.

GEORGE WILKIE, *Counsel*
For the Canadian National Railways.

The following letter and questions were sent to the Secretaries of the Department of Marine and Fisheries, Department of Public Works, and Department of the Interior, Ottawa:

OTTAWA, *May 18, 1925.*

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

[Questions enclosed]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with the following related matters would ask that any statement submitted include the following:

(1) A general statement as to the manner in which navigation would be affected by an increase in maximum level (a) of one, two, three or four feet on Rainy Lake above elevation 1108.61 (497 D. P. W. datum); (b) of two, four, six and eight feet on Namakan Lake above elevation 1120.11 (508.5 D. P. W. datum).

(2) What in your opinion is the extreme lower limit to which Rainy and Namakan Lakes could be lowered without undue injury to navigation?

DEPARTMENT OF MARINE AND FISHERIES,
DEPUTY MINISTER'S OFFICE,
OTTAWA, *May 28, 1925.*

SIR: In reply to your letter of the 18th instant, enclosing a copy of the official reference in the Rainy Lake Investigation, together with certain specific questions having a direct bearing on navigation interests, I beg to say that owing to lack of data on Rainy Lake and to the necessity of certain field investigations in connection therewith, it will be a matter of some four months before this Department is in a position to answer your questions.

Yours very truly,

A. JOHNSTON, *Deputy Minister.*

LAWRENCE J. BURPEE, Esq.,
Secretary, International Joint Commission, Ottawa.

DEPARTMENT OF PUBLIC WORKS,
Ottawa, May 22, 1925.

DEAR SIR: I have received your letter of the 18th instant, enclosing a copy of the official reference in the Rainy Lake Investigation. The matter has been referred to the Chief Engineer of the department for attention.

Yours truly,

S. E. O'BRIEN, *Secretary.*

The SECRETARY, INTERNATIONAL JOINT COMMISSION,
Ottawa.

DEPUTY MINISTER OF THE INTERIOR,

Ottawa, Canada, 10th June, 1925.

DEAR MR. BURPEE: With reference to your communication of the 9th of June, requesting information as to when the Department of the Interior will be in a position to furnish a statement setting forth its views with respect to the reference now before the Commission relative to the regulation of Rainy Lake and the boundary waters above Rainy Lake, I am advised that the preparation of this statement will involve extensive study and investigation on the part of departmental officials, and that a period of at least six months will be required before any statements may be submitted.

As our investigation and study of the reference proceeds, it may be necessary to secure additional field information and, as a consequence, any statement in the time specified may be preliminary and subject to a later supplemental statement.

Yours very truly,

W. W. CORY, *Deputy Minister.*

LAWRENCE J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa.

OTTAWA, May 18, 1925.

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible, the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

HON. G. H. FERGUSON, K. C., LL. B.,

Premier of Ontario, Toronto.

[Inclosure]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with the following related matters would ask that any statement submitted include the following:

(1) A statement in detail of appraised value of Crown public state lands for which flowage rights are required with the present upper limiting elevation of Rainy Lake at 1108.61 sea level datum (497.0 D. P. W. datum).

(2) A statement in detail of appraised value of Crown public state lands for which flowage rights are required with the present upper limiting elevation of Namakan Lake at 1120.11 (508.5 D. P. W. datum).

(3) A statement of any claim pending on your part against the owners of the dam at the outlet of Rainy Lake and the dams at the outlets of Namakan lake for flowage or other cause relating to the levels of Rainy and Namakan lakes.

(4) If available, a statement of extent and appraised value of Crown public state lands which would be affected by an increase in level, (a) on Rainy

Lake for each foot above elevation 1108.61 (497 D. P. W. datum) to elevation 1112.61; (b) on Namakan Lake for each two feet above elevation 1121.11 (508.5 D. P. W. datum) to elevation 1128.11; (c) on boundary waters above Namakan Lake if held at high water mark or 5 feet above such elevation.

(5) If for a flowage easement for storage purposes full appraised value of lands is not required; then on what terms can such flowage be secured?

ONTARIO,
OFFICE OF THE PRIME MINISTER,
Toronto, June 5, 1925.

Re Rainy Lake Investigation

DEAR SIR: With reference to your further letter on this subject, I have consulted with our Provincial Director of Surveys, who advises me that it will take from four to six months to compile the information in the possession of the Department.

This, however, will not be sufficient for the purpose of answering the questions you have submitted but will have to be supplemented by local observations and surveys.

Under the circumstances, the best suggestion that I can offer is that the engineer of the Commission will confer with our Provincial Director of Surveys in order to reach an agreement as to the most suitable course of procedure.

Yours very truly,

G. H. FERGUSON.

LAWRENCE J. BURPEE Esq.,
Secretary, International Joint Commission, Ottawa.

OTTAWA, May 18, 1925.

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible, the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

The SECRETARY,
Department of Indian Affairs, Ottawa.

[Inclosure]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with the following related matters would ask that any statement submitted include the following:

(1) A general statement as to the manner in which your interests would be affected by an increase of maximum level (a) on Rainy Lake for each foot above elevation 1108.61 (497.0 D. P. W. datum) to elevation 1112.61; (b) on Namakan Lake for each two feet above elevation 1120.11 (508.5 D. P. W. datum) to elevation 1128.11.

(2) What protective works or measures would be necessary for the above (to be accompanied, if possible, by plans of the required works).

(3) What would be the estimated cost of such protective works or measures?

(4) A statement as to the effect on any Indian lands if the boundary waters above Namakan Lake are held at high water mark, or 5 feet above such elevation, together with an estimate of the cost of such protective works, or of such compensation to the Indians, as might appear necessary.

(5) Have you any interest in the method of control of these levels and if so, what?

DEPARTMENT OF INDIAN AFFAIRS, CANADA.

Ottawa, 10th September 1925.

SIR: With further reference to your letter of the 18th May last relating to the Rainy Lake investigation and also to yours of the 18th ultimo containing notice of hearing to be held at International Falls, Minnesota, on Monday, September 28th, I have to advise you that the Department is informed by the Director of the Dominion Water Power and Reclamation Service, whose engineers are obtaining the necessary information for this Department in connection with the Indian reserves which would be affected by the raising of the waters as suggested, that his engineer will be unable to complete the required information this season. This Department is, therefore, not in a position to present this claim at the public hearing on Monday 28th.

You will realize the extent of the work necessary to obtain the information when I inform you that fourteen different Indian reserves have to be investigated and that these reserves are situate in different localities on the waters from La Croix lake westerly to the North West bay of Rainy Lake and Lake Despair. There will undoubtedly be considerable claim for damages by this Department if the waters are raised as suggested but not being yet in possession of sufficient definite information the Department does not wish to incur the expense necessary in sending a representative to the hearing unless your Commission considers that this letter would not sufficiently protect the interests of the Department and that the ultimate claim of the Department for damages would be jeopardized if a representative is not present at that hearing. Would you be good enough to inform me on this latter point at an early date?

Your obedient servant,

A. F. MACKENZIE,

For Assistant Deputy and Secretary.

The SECRETARY,

International Joint Commission, Ottawa, Ont.

OTTAWA, *September 14, 1925.*

DEAR SIR: I beg to acknowledge your letter of the 10th instant in the matter of the Rainy Lake Investigation. It is probably not necessary that your Department should send a representative to the hearing at International

Falls if you will not be in a position to present any testimony at that time. I presume that when the information is available as to the effect of various levels on Rainy Lake upon the Indian Reserves you will submit it to this Commission.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

A. F. MACKENZIE, Esq.,
Department of Indian Affairs, Ottawa.

OTTAWA, *May 18, 1925.*

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

W. A. FOUND, Esq.,
Director of Fisheries,
Department of Marine and Fisheries, Ottawa.

[Inclosure]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with the following related matters would ask that any statement submitted include the following:

(1) A general statement as to the manner in which fishing would be affected by an increase in maximum level (a) of one, two, three, or four feet on Rainy Lake above elevation 1108.61 (497 D. P. W. datum); (b) of two, four, six, and eight feet on Namakan Lake above elevation 1120.11 (508.5 D. P. W. datum).

(2) In what way or manner would a seasonal fluctuation in water level affect the fishing and what is the maximum range in levels which might be permitted in any one year without undue injury to fishing.

DEPARTMENT OF MARINE AND FISHERIES,
FISHERIES BRANCH.

May 29, 1925.

DEAR SIR: In acknowledging your letter of the 27th instant further with regard to the information asked for by the International Joint Commission as to the effect on the fisheries of the proposed raising of the levels of the Rainy River system above Kettle Falls, I may explain that as the fisheries in Ontario are owned and are being administered by the Provincial authorities, the copy of the reference of the matter to the Commission, together with the

questions submitted have been forwarded to the Deputy Minister of Game and Fisheries at Toronto, with the request that the replies be forwarded direct to you.

Yours truly,

WM. A. FOUND, *Director of Fisheries.*

LAWRENCE J. BURPEE, Esq.

Secretary, International Joint Commission, Ottawa, Ont.

ONTARIO DEPARTMENT OF GAME AND FISHERIES,

Toronto, May 27, 1925.

DEAR SIR: I beg to acknowledge receipt of your favor of the 18th instant, together with enclosures as stated. The Department will prepare answers to your various questions at the earliest possible date and forward them promptly to your Commission.

Yours truly,

D. McDONALD,

Deputy Minister of Game and Fisheries.

L. J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa, Ontario.

ONTARIO DEPARTMENT OF GAME AND FISHERIES,

Toronto, June 23, 1925.

DEAR SIR: Again replying to your favor of the 18th ultimo, I have to advise you that from the information that the Department has been able to gather the concensus of opinion is that an increase in the maximum level of the waters on Rainy Lake and Namakan Lake would not seriously affect the fisheries, although the existing spawning beds would be eliminated and new ones would be created on suitable bottoms and in suitable depths of water. Great damage, however, would arise by constant variations in the water levels to any great extent. This damage would not only apply to the fisheries but would extend to all water fur-bearing animals such as muskrat and beaver, which would be frozen out by extreme variations in water levels.

The Department's information has been gained from the opinion of those interested in the fisheries and fur production in the district to be affected and from the experience gained in other waters where fluctuations exist to any great extent.

Yours truly,

D. McDONALD,

Deputy Minister of Game and Fisheries.

L. J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa.

The following letter and questions were sent to Hon. John Bracken, Premier of Manitoba, Winnipeg; His Worship the Mayor of Winnipeg; E. Anderson, Esq., K. C., counsel for Winnipeg Electric Street Railway Co. and Manitoba Power Co., Winnipeg; Lake of

the Woods Milling Co., Montreal, Que., Keewatin Power Co., Toronto, Ont.:

OTTAWA, *May 18, 1925.*

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible, the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

[Questions enclosed]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with the following related matters would ask that any statement submitted include the following:

(1) In what way will your interests be affected by any of the proposals in the reference?

(2) Please submit your views as to:

(a) The benefits, if any, you have derived from the existing storage in Rainy and Namakan lakes, regulated as they have been in the past.

(b) The benefit you might expect to derive from existing storage on Rainy and Namakan lakes under some different system of regulation to that which has obtained in the past.

(c) To what extent or on what basis are you prepared to contribute to the cost of existing storage on Rainy and Namakan lakes?

(d) The benefit you might expect to derive from *additional* storage on Rainy and Namakan lakes and on the upper boundary lakes under some approved system of regulation.

(e) What method or system of regulation would you suggest as feasible and advisable for the storage on Rainy Lake, Namakan Lake and the upper boundary lakes, individually or collectively?

(f) What method of administrative control do you suggest for the operation of the above storage reservoirs, individually or collectively?

(g) Providing it is shown that the total volume of storage which may be secured on these waters, under an approved method of control, would add to the dependable flow on the Winnipeg River in Manitoba, what would be your attitude towards assuming a portion of the storage costs?

PROVINCE OF MANITOBA,
ATTORNEY GENERAL,
Winnipeg, June 2, 1925.

LAWRENCE J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa, Canada.

DEAR SIR: Your letter of the 27th instant to Premier Bracken has been handed to me in his absence.

I shall take the matter up with the technical advisers of the Department of Public Works and with the power interests in Manitoba that may be affected, advising you in due course.

Yours truly,

R. W. CRAIG, *Attorney General.*

PROVINCE OF MANITOBA,
ATTORNEY GENERAL,
Winnipeg, June 5, 1925.

LAWRENCE J. BURPEE, Esq.,
Secretary, International Joint Commission, Ottawa, Canada.

DEAR SIR: Referring to my letter of the 2nd instant, I beg to advise that I have been in touch with the power interests in Manitoba affected by the proposed reference as to the Rainy Lake levels and understand that a period of about one month from June 12th would be sufficient to enable them to reply to your communication.

This Government is only indirectly interested in the matter and I am not sure at the moment whether we shall consider it necessary to make any formal separate reply. It may be that the various interests will make a joint reply.

Yours truly,

R. W. CRAIG, *Attorney General.*

CITY OF WINNIPEG,
Manitoba, June 8, 1925.

LAWRENCE J. BURPEE, Esq.,
Secretary, International Joint Commission, Ottawa, Ont.

DEAR SIR: With further reference to my letter to you of the 1st instant, and to your letter of the 27th ultimo to His Worship the Mayor of Winnipeg, I have been endeavouring to ascertain from the engineers exactly how long it would take to give me the necessary information to enable intelligent replies to be made to the questions submitted in this matter, and I am to-day in receipt of advice to the effect that it would take several months to even compile the information now at their disposal. I am engaged in examining the questions with a view to making preliminary replies, but I am afraid that it is impossible for me to say at this present time exactly when any replies will be ready. I shall most probably be in a position to communicate some information to you some time at the end of this month or early next month.

Yours truly,

J. PREUDHOMME, *City Solicitor.*

WINNIPEG ELECTRIC COMPANY,
LEGAL DEPARTMENT,
Winnipeg, Canada, July 9, 1925.

L. J. BURPEE, Esq.,
Secretary, International Joint Commission, Ottawa, Ont.

Re: Rainy Lake Reference

DEAR SIR: On the 4th June I wrote you stating that I expected to be in a position to submit answers to the questions sent out on or before the 12th of this month. I regret to state that I am unable to do so. It is exceedingly difficult at this stage of the investigation to make any intelligent answer to the questions propounded. It seems to me that it would be better to allow the matter to stand until the investigation at least is under way before asking the parties to answer the questions.

I shall be glad to know if the other parties to whom the questionnaire has been sent have answered and if I am the only one in default. I understand the City of Winnipeg has not yet sent in an answer and does not expect to do so for some time, but I also understand that all other parties interested in the reference were sent similar questionnaires.

Yours truly,

E. ANDERSON, *Counsel.*

LAKE OF THE WOODS MILLING COMPANY, LIMITED,
Montreal, June 10, 1925.

LAWRENCE J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa, Ont.

DEAR SIR: With reference to your letters of May 8th and 25th, and the accompanying official reference and list of questions on the Rainy Lake investigation, we beg to state that our engineer, Mr. R. S. Lea, has advised us that not less than five months will be necessary to prepare answers to your list of questions.

Yours truly,

LAKE OF THE WOODS MILLING COMPANY, LIMITED.

TORONTO, 23rd May, 1925.

LAWRENCE J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa, Canada.

DEAR SIR: I desire to acknowledge receipt of your letter of May 18th with two enclosures, one bearing the signature of Hon. W. L. Mackenzie King. This matter will require careful consideration, which it will receive immediately, after which I will deal with the matter as fully as possible in the recommendations we make.

Very truly yours,

KEEWATIN POWER COMPANY, LIMITED,
STRACHAN THOMSON, *Secretary.*

The following letter and questions were sent to the Mayors of Fort Frances, Kenora, and Rainy River, Ont.:

OTTAWA, May 18, 1925.

DEAR SIR: I enclose herewith for your information, a copy of the official reference in the Rainy Lake Investigation. I also enclose certain specific questions to which the Commission would be glad to have as complete answers as you are prepared to furnish.

I shall be pleased if you will let me know as soon as possible the earliest date at which you can let the Commission have answers to these questions. As soon as the replies have been received from the various interested parties, the Commission will fix a date for a public hearing, somewhere in the locality, of which due notice will be given.

Yours very truly,

LAWRENCE J. BURPEE, *Secretary.*

[Questions enclosed]

The Commission is desirous of having your views on all points incorporated in the reference, and in particular in connection with Questions (1)a, and (2), would ask that a statement covering the following points be submitted:

(1) A general statement as to the manner in which your interests would be affected by an increase of maximum level of Rainy Lake for each foot above elevation 1108.61 (497.0 D. P. W. datum) to elevation 1112.61.

(2) What protective works or measures would be necessary (to be accompanied if possible by plans of the required works).

(3) What would be the estimated cost of such protective works or measures?

(4) Have you any interest in the method of control and if so, what?

TOWN OF FORT FRANCES,
Fort Frances, Ontario, June 3, 1925.

LAWRENCE J. BURPEE, Esq.,

Secretary, International Joint Commission, Ottawa, Ontario.

DEAR SIR: Referring to your communications of May 18th, 1925, and May 27th, 1925, I am instructed to advise you that it is impossible for the Town of Fort Frances to answer in detail the questions asked.

Regarding question (1) the town contends that any raise whatever in the levels above the present crest of the dam at this point, viz, elevation 1108.6 (497 O. B. M. D. P. W. datum) would be exceedingly detrimental to public and private property and business in Fort Frances—the greater the increase the greater the damage would be. At 497 O. B. M. the town park and Pithers Point have already been injuriously affected; the bathing beaches have been greatly reduced in area and attractiveness; and during the flood of 1916, when the water reached the stage approximating 498, the park was flooded so that beautiful shade trees were destroyed and the greater portion of the park became useless. Even this spring when the water has only reached 495 B. M. we have had a great deal of trouble in the matter of flooding of cellars.

At the level of 498 B. M. it is believed that the greater portion of the sewer system would have to be reconstructed, and at higher levels it is doubtful if any sewer system or protective measures could be devised that would render the town habitable.

In addition the town has direct interest in the summer resort possibilities of Rainy Lake. The islands and various beauty spots are becoming more and more popular and are annually attracting cottagers and transient tourists in large numbers to the town and district. Any raise in the maximum level now established would most injuriously affect these beauty spots and any considerable increase would utterly destroy them. In addition to this the bathing beaches on the lake will be practically wiped out.

Regarding questions (2) and (3), the expense of securing engineering data and estimates of the cost of protective works is prohibitive. In general it may be stated that miles of dyking would be required not only along the river but also along the lake shore, and the construction of such a dyke would in itself mean the destruction of the park bathing beaches.

Regarding question (4) the town is, of course, not particularly concerned with the method of control so long as such control is exercised in the interests of the public generally and not in the interests of any one class of the com-

munity. The town does wish to state, however, that the practice heretofore maintained of having matter of holding back or discharging of water at the dam here in the hands of the engineering staff of the Department of Public Works at Ottawa, has been entirely satisfactory.

In conclusion the town desires to point out that it is unfair upon the part of those who seek a change in the established conditions, to ask that this community and the business and private interests involved be put to any expense in the matter of securing data and presenting evidence in support of their objections to any interference with the status quo.

Yours respectfully,

J. W. WALKER, *Clerk of Fort Frances.*

THE TOWN OF KENORA,
Ontario, June 2, 1925.

INTERNATIONAL JOINT COMMISSION,
Ottawa, Ontario.

DEAR SIR: Mayor Brenchley has handed me your communications of May 18th and 27th, in respect to regulation of water levels in the Rainy Lake district, asking me to acknowledge the same and to state that the subject matter of your letter will receive full consideration.

When the necessary data has been obtained we will be glad to communicate to you the opinion of this section in respect to this matter.

Yours very truly,

F. J. HOOPER, *Clerk.*

CORPORATION OF THE TOWN OF RAINY RIVER,
June 2, 1925.

INTERNATIONAL JOINT COMMISSION,
Ottawa, Ontario.

GENTLEMEN: Your letter of May 18th, and of May 27th received in connection with the Rainy Lake Investigation.

The Town of Rainy River is situated sixty miles west of Fort Frances on the Rainy River, as of course you know, and the Council have not gone into the matter of water levels very much, but it does not appear to them that the level of Rainy Lake would affect us very much. If it were the level of the Lake of the Woods it would be different.

We thank you for your notification of possible changes, but as I have mentioned it does not appear that we would be affected.

Yours truly,

E. E. JESS, *Clerk and Treasurer.*

LETTERS AND RESOLUTIONS PROTESTING AGAINST CHANGES IN LEVELS

AMERICAN GAME PROTECTIVE AND PROPAGATION ASSOCIATION,
Woolworth Building, 233 Broadway, New York, July 31, 1925.

MR. WILLIAM H. SMITH,
Secretary International Joint Commission, Washington, D. C.

DEAR SIR: I am informed that the International Joint Commission will meet at International Falls on August 3, 1925, for the purpose of considering the granting of an application for water power rights on the boundary waters lying between Minnesota and Ontario and including Loon lake, Lake La Croix and Saganga lake.

This matter has just come to my attention and it would appear that there has been no opportunity for consideration, by the public, of this proposal. It is a matter of vital interest to the people of the United States and Canada and particularly to citizens of Minnesota and Ontario.

No action of this kind should be finally taken until the public is fully advised of what is contemplated, and opportunity afforded for presentation of facts on behalf of the public. As a citizen of Minnesota, I wish to protest against final action being taken on August 3, 1925, and to suggest deferring disposition of such application until a later date.

Yours truly,

CARLOS AVERY

WASHINGTON, August 1, 1925.

CARLOS AVERY, Esq.,

Vice President, American Game Protective & Propagation Assn.,

Woolworth Building, 233 Broadway, New York.

DEAR SIR: I beg to acknowledge receipt of your letter of July 31st stating your information that the International Joint Commission will meet at International Falls on August 3rd for the purpose of considering the granting of an application for water power rights on the boundary waters lying between Minnesota and Ontario; further stating that it would appear that there has been no opportunity for consideration, by the public, of the proposal; and protesting against final action being taken on August 3rd.

In reply I have to say that the International Joint Commission has before it no application for power development in the waters referred to.

The Commission has before it, however, by joint reference from the Governments of the United States and Canada, certain questions for investigation and report, with conclusions and recommendations, regarding the level of certain of the boundary waters between the two countries. The purpose of the governments in making the reference is to secure the most advantageous use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes, and to secure the most advantageous use of the shores and harbors of both Rainy lake and the waters flowing into and from that lake.

Notice of this reference and proposed investigation was given, in the United States, by paid advertisement for three weeks in the St. Paul Pioneer Press, the Minneapolis Journal, and the Duluth Herald, wherein it was also stated that notice of a date, to be determined upon, for public hearing before the Commission would later be published.

Some preliminary engineering work in this region having been performed under direction of the Commission, September 28, 1925, has been fixed for a public hearing to be held by the Commission at the court house at International Falls, at 10 o'clock a. m. All interested parties are entitled to be heard and are invited to present their views at this hearing. Upon the statements made at this hearing, and the data accumulated by the Commission's engineers, the report of the Commission will be based; final action in the matter being in the hands of the two governments.

Very truly yours,

WM. H. SMITH, *Secretary.*

PEORIA, ILLINOIS, *July 31, 1925.*

Mr. WM. H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: The writer has just learned that E. W. Backus of Minneapolis is asking permission to build a series of dams for the purpose of storing water for a contemplated paper mill at Fort Frances, a huge dam to be built below Loon lake. This will raise the water level of Lake La Croix and all other lakes up to Saganaga lake, and will flood the low lands and timber lands, and destroy one of the most wonderful scenic areas along the international boundary, together with the many islands, etc.

We today in America, including the President of the United States, have at last realized that we must conserve our timber lands, and that the timber and lakes in question are more valuable as a place where our citizens can find recreation, and where timber can be grown, fur produced, and our children have a place where they can get to the out of doors, than the commercial interest, or value as a commercial enterprise in furnishing water power for a paper mill. The cost to the citizens of this country in the destruction of timber, etc., and the loss occasioned to the public, is greater than any benefits that could come from it, and it is unfair to permit, in the opinion of the writer, private interests to reap a benefit at so great a loss to the public as this.

Here in Illinois great amounts of money are being spent in creating artificial lakes where people have recreation, and it is submitted that, in the interest of the public, the granting of these power rights to the Backus interests should be denied, and the writer asks that this be done, and submits that the same should be in the interests of the citizens of these United States.

Assuring you that anything you can do along the line suggested will be greatly appreciated, I beg to remain,

Very truly yours,

A. L. ANDERSON.

WASHINGTON, *August 3, 1925.*

A. L. ANDERSON, Esq.,

125 North Jefferson Avenue, Peoria, Ill.

DEAR SIR: Replying to your communication of July 31, 1925, I beg to say that there is pending before the International Joint Commission no application for permission to build dams or other works in the boundary waters between Minnesota and Ontario.

The Commission has before it, however, by reference from the Governments of the United States and Canada, a series of questions for investigation regarding the levels of those waters. The Commission will hold a public hearing at International Falls, Minn., on September 28, 1925, when the questions will be taken up. Subsequently a report, based upon testimony taken, statements, and engineering data accumulated, will be submitted to the two governments, together with conclusions and recommendations of the Commission as to the best means to be adopted to secure the most advantageous use of those waters and their shores and harbors for domestic, sanitary, navigation, fishing, power, irrigation, and reclamation purposes. Formal notice of said hearing will be published in due time.

Very truly yours,

WM. H. SMITH, *Secretary.*

METROPOLITAN NATIONAL BANK,
Minneapolis, Minn., September 1, 1925.

INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

GENTLEMEN: I understand that there is to be a hearing soon at International Falls relative to the contemplated project of the Backus-Brooks interests, which would materially raise the level of the lake along the international boundary and overflow a large amount of adjacent territory and to a large extent result in the devastation of this area.

I am somewhat familiar with this territory as I have been over it the last four summers, both this side of the boundary and in the Quetico reserve and as a citizen of this country I wish to register my objection to the betrayal of this territory to commercial greed, and wish further to state that it is my opinion it would be a most short sighted policy to destroy and despoil a wonderful piece of country which should be preserved as a heritage for future generations.

Yours very truly,

M. D. CHANDLER.

WASHINGTON, September 4, 1925.

M. D. CHANDLER, Esq.,

Vice President, Metropolitan National Bank, Minneapolis, Minn.

DEAR SIR: Replying to your letter of the first instant, I beg to say that there is no application pending before the International Joint Commission for approval of any power development in the waters referred to.

The Commission has before it, however, for investigation and report certain questions which are contained in the notice of hearing enclosed herewith.

Your protest will be placed before the Commission for careful consideration.

Yours very truly,

WM. H. SMITH, *Secretary.*

THE UNIVERSITY OF CHICAGO,
RYERSON PHYSICAL LABORATORY,
1 August, 1925.

MR. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: I beg leave to express my hope that no action will be taken by the Joint Commission which will injure the scenic and recreational value of the Superior national forest and the Quetico forest reserve of Ontario. I understand that this will occur if the water power rights in this region are awarded to the E. W. Backus interests.

My interest in this country is typical of many hundreds of others who are in the habit of spending our vacations in it as canoeists and campers. I have spent summers in the Adirondacks, in the Cascade range, in the White mountains and in several parts of the northern Great Lake country, and can say without hesitation that the country along the Minnesota border is the peer of them all for those who find their recreation in the hill, lake and forest country.

Furthermore I am quite familiar with the region which will be affected by this project, and can say with certainty that the region would be completely ruined as a recreation ground in case the levels of the lakes are altered. There is already ample suggestion of what dams would do to the country in the disastrous effects of the old lumber dams at Loon lake and the numerous beaver dams which have been built since the beaver have enjoyed protection.

This country is of great value to the youth and manhood of the country, and will become increasingly so if properly protected. I wish therefore to voice an earnest protest against any action which would sacrifice it to commercial interests.

Respectfully yours,

KARL T. COMPTON,
Professor of Physics, Princeton University.

HUBERT, MINNESOTA, *July 18, 1925.*

JOINT WATERWAY COMMISSION,
Washington, D. C.

Gentlemen: I wish to enter a protest against the high water level on the Minnesota-Canadian boundary lakes.

Crane lake, on which we have our boys camp, is very high due to Mr. E. W. Backus and the M. & O. Power Co. of International Falls, Minn.

Much land is under water and I ask whether above Power Co. cannot reasonably be regulated.

Yours truly,

R. F. B. COTE.

DEPARTMENT OF THE INTERIOR,
UNITED STATES GEOLOGICAL SURVEY,
Washington, July 28, 1925.

HON. ROBERT N. STANFIELD,
United States Senate.

MY DEAR SENATOR STANFIELD: The letter of July 18 addressed to the Joint Waterway Commission by Mr. R. F. B. Cote, Director, Camp Lincoln, Hubert, Minn., relative to the high stage of Minnesota-Canada boundary lakes, has been received in the Geological Survey and has been referred to the International Joint Commission, which has jurisdiction over all cases "involving the use or obstruction or diversion of boundary waters between the United States and Canada."

Very cordially yours,

GEO. OTIS SMITH, *Director.*

WASHINGTON, *July 29, 1925.*

THE HONORABLE ROBERT N. STANFIELD,
United States Senate, Washington, D. C.

DEAR SENATOR STANFIELD: I am in receipt, by reference from the United States Geological Survey, of a communication from Mr. R. F. B. Cote, Director, Camp Lincoln, Hubert, Minn., protesting against the high water levels on Minnesota-Canada boundary lakes, and asking whether the Minnesota & Ontario Power Company of International Falls, Minn., cannot reasonably be regulated. I have addressed a communication to Mr. Cote, copy of which is enclosed herewith.

Yours very truly,

WM. H. SMITH, *Secretary.*

WASHINGTON, July 29, 1925.

MR. R. F. B. COTE,
Director, Camp Lincoln, Hubert, Minn.

DEAR SIR: By reference from the United States Geological Survey, I am in receipt of your letter of July eighteenth addressed to the Joint Waterway Commission, protesting against the high water level on Minnesota-Canada boundary lakes, and inquiring whether the Minnesota & Ontario Power Company of International Falls, Minn., cannot reasonably be regulated.

The International Joint Commission has before it, by joint reference from the Governments of the United States and Canada, certain questions for investigation and report with conclusions and recommendations regarding the level of certain of the boundary waters between the United States and Canada. The purpose of the investigation requested by the two governments is in order to secure the most advantageous use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes, and in order to secure the most advantageous use of the shores and harbors of both Rainy lake and the waters flowing into and from that lake.

Some preliminary engineering work in this region has been performed under the direction of the Commission, and the Commission will hold a public hearing at the court house at International Falls on the twenty-eighth of September, at which all interested persons are not only entitled to appear but are invited to be present and submit their views. Formal notice of this hearing will be sent to you in due time.

Very truly yours,

WM. H. SMITH, *Secretary.*

CONSERVATION COUNCIL,
1649 Otis Building, Chicago, July 29, 1925.

WILLIAM H. SMITH,
Secretary International Joint Commission, Washington, D. C.

DEAR SIR: The Conservation Council of Chicago, which represents twenty-eight organizations in Chicago and vicinity interested in outdoor life and conservation, understands that there is a project to dam the waters of the Superior national forest in the vicinity of Lake La Croix for the purpose of storing water for a paper mill at Fort Frances, Ont. This will undoubtedly injure a large portion of this wonderful forest region by backing up the water and killing trees at the shore line. We are firmly convinced that this region is one of the most important spots that may be reserved for genuine outdoor life, that it should not be invaded by auto roads and should not be injured any more than the great national parks should be by damming. Such a project gives a profit to certain commercial interests to the detriment of the people in general, and the unfortunate thing is that such damage once done is done forever.

We respectfully protest against allowing such a project to go through and believe that the thousands of members of the organizations we represent and speak for are only a part of the great number of people in the middle West and elsewhere who have a lively interest in such questions of conservation, but have not as definite means of expressing their views as the commercial interests that back destructive projects.

Very truly yours,

EVERETT L. MILLARD, *Chairman.*

WASHINGTON, July 31, 1925.

EVERETT L. MILLARD, Esq.,

Chairman, Conservation Council, 1649 Otis Building, Chicago.

DEAR SIR: Your letter of the twenty-ninth instant, protesting against the damming of the waters of the Superior national forest in the vicinity of Lake La Croix, for the purpose of storing water for a paper mill at Fort Frances, Ont., has been received in this office and will be placed before the Commission.

The International Joint Commission has before it, by joint reference from the Governments of the United States and Canada, certain questions for investigation and report, with conclusion and recommendations, regarding the level of certain of the boundary waters between the United States and Canada. The purpose of the investigation requested by the two governments is in order to secure the most advantageous use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes, and in order to secure the most advantageous use of the shores and harbors of both Rainy lake and the waters flowing into and from that lake.

Some preliminary engineering work in this region has been performed under the direction of the Commission, and the Commission will hold a public hearing at the court house at International Falls, Minn., on September twenty-eighth, at which all interested persons are not only entitled to appear but are invited to be present and submit their views. Formal notice of this hearing will be sent to you in due time.

Yours very truly,

WM. H. SMITH, *Secretary.*

JOPLIN CHAPTER NO. 31 OF THE
 IZAAK WALTON LEAGUE OF AMERICA,
 420 Joplin Street, Joplin, Mo., July 30, 1925.

MR. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: As a member of the above league and also as a member of the Superior National Forest Recreation Association, I protest strongly against the granting of the water power rights at Loon lake, Lake La Croix, and surrounding waters to the Backus interests for storing of water for contemplated paper mill at Fort Frances, or to any interests whose operations will destroy this chain of lakes.

Many other members of these leagues are opposed to this vandalism the same as I am.

Yours truly,

R. H. BARRATT.

WASHINGTON, August 3, 1925.

R. H. BARRATT, Esq.,

420 Joplin Street, Joplin Mo.

DEAR SIR: Acknowledging receipt of your communication of July 30, 1925, I beg to say that there is pending before the International Joint Commission no application for the granting of water power rights in the boundary waters between the State of Minnesota and the Province of Ontario.

The Commission has before it, however, by reference from the Governments of the United States and Canada, a series of questions for investiga-

tion regarding the levels of those waters. The Commission will hold a public hearing at International Falls, Minn., on September 28, 1925, when the questions will be taken up. Subsequently, a report, based upon testimony taken, statements, and engineering data accumulated, will be submitted to the two governments, together with conclusions and recommendations of the Commission as to the best means to be adopted to secure the most advantageous use of those waters and their shores and harbors for domestic, sanitary, navigation, fishing, power, irrigation, and reclamation purposes. Formal notice of said hearing will be published in due time.

Very truly yours,

WM. H. SMITH, *Secretary.*

MADISON, WIS., *August 3, 1925.*

Mr. WM. H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: I am informed by the Superior National Forest Recreation Association, of which I am a member, that your Commission is considering an application to impound the waters of Lake La Croix and other waters along the international boundary for the purpose of operating a paper mill at Fort Frances.

I am very much interested in this region and have spent my vacations there during the last two years. An increasing number of citizens of Madison and other midwestern points have come to regard this general area as the only place remaining in the lake states suitable for the particular recreation which we enjoy. I have never heard of this proposed power project until a few days ago and it is probable that its approval will seriously menace the recreational opportunities in which I am interested. It seems to me that action on this application should be taken only after thorough public discussion of all the questions involved, and I wish to protest any commitments being made at this time. It would be a serious injustice to those who depend on this area to decide this question without full publicity of both sides of the case.

Very truly yours,

ALDO LEOPOLD.

WASHINGTON, *August 7, 1925.*

Mr. ALDO LEOPOLD,

2222 Van Hise Avenue, Madison, Wis..

DEAR SIR! Replying to your communication of the 3rd instant, I beg to say that there is no application pending before the International Joint Commission for approval of any power development in the waters referred to.

There are before the Commission, however, certain questions referred to it by the Governments of the United States and Canada, for investigation and report to those governments, touching the problem of determining the level to be established and the best means to be adopted which will secure the most advantageous use of the waters of Rainy lake and adjacent waters and of their shores and harbors for sanitary, domestic, navigation, fishing, power, irrigation, and reclamation purposes.

This matter will be taken up at a public hearing before the International Joint Commission at International Falls, Minn., on September 28, 1925.

Very truly yours,

WM. H. SMITH, *Secretary.*

VIRGINIA, MINN., *August 14, 1925.*

WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

Damming over Canadian border region Backus lumber interests

DEAR SIR: As a citizen and tax payer I strongly protest against the allowing the above interests to carry out their gigantic damming project which is contemplated, and which will ruin the entire border lake country.

Not only the people of Minnesota and Ontario are vitally interested in this section, but we have people from all over the United States and Canada coming to this section, which on the American side is now known as The Arrowhead Country, and which the Minnesota Arrowhead Association, comprising nineteen commercial clubs in northeastern Minnesota, is gathering together \$50,000 to spend on advertising this great scenic country.

The writer feels that this section that is to be ruined by the Backus interests belongs to the people, and they should have first consideration.

Yours very truly,

D. G. McLEOD.

SUPERIOR NATIONAL FOREST RECREATION ASSOCIATION,

Orr, Minn., June 7, 1925.

INTERNATIONAL JOINT COMMISSION,

Washington, D. C.

GENTLEMEN: I have before me an application by the Fort Frances Pulp and Paper Company, E. W. Backus, Pres., dated August 25th, 1920, for the right to construct and control permanent dams at several lakes along the international waters, some of these situated in the Superior national forest.

Our association is interested in any development affecting the Superior national forest, a publicly owned reservation of inestimable recreational value to the people of the United States. As far as I have been able to ascertain, and I am only now returning from a trip to Fort Frances to look the ground over and expect to spend the next two months on the Superior forest, especially those waters affected by above application, the project is one that can benefit but one individual at the expense of the entire citizenry of the United States.

I trust that you will carefully weigh the prior rights of our people against the wishes of a single individual or corporation at the former's expense. I am certain that any action taken detrimental to the real owners of this affected area will arouse intense feeling over the entire country.

Very truly yours,

PAUL B. RIIS.

WASHINGTON, *June 11, 1925.*

PAUL B. RIIS, Esq.,

President, Superior National Forest Recreation Assn., Orr, Minn.

DEAR SIR: We have your letter of the seventh instant and in reply beg to state that the International Joint Commission has been requested, by joint action of the Governments of the United States and Canada, to examine and report to the two governments upon certain questions touching the level of Rainy lake and the boundary waters flowing into and from that lake. Type-written copy of the reference submitting the questions is herewith enclosed.

The Commission is now endeavoring to assemble data of a technical and engineering nature relating to the matter, and when this has been obtained

the question of public hearings will be taken up and time and place fixed for such hearings, of which published notice will be given. Direct notice by letter will also be sent to interested parties whose names and addresses are known at this office. In this connection, if you know of interested parties in addition to yourself who have knowledge of pertinent facts and information concerning the various problems involved in this investigation, and whom you think should be notified of hearings to be held by the Commission, in order that they may have an opportunity to appear, and will send the names and addresses to this office, the courtesy will be greatly appreciated. No definite action will be taken by the Commission until parties interested enough to appear have had opportunity to do so and to present their views to the Commission in a public hearing. When the Commission determines the answers to the questions submitted to it by the two governments, those answers will be in the form of a report upon which subsequent action by those governments will be required before changes in existing conditions can be brought about.

Respectfully,

WM. H. SMITH, *Secretary.*

SUPERIOR NATIONAL FOREST RECREATION ASSOCIATION,
Rockford, Ill., July 7, 1925.

MR. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: Mr. Paul B. Riis, President of the Superior National Forest Recreation Association, has requested that I protest to you again, on behalf of our organization, against the flooding of the lands along the international boundary above Fort Frances, Ont., to furnish water for a power project and paper mill for the Backus company.

Mr. Riis states that the Backus interests alone will benefit from this project. He says it will flood many beautiful and interesting islands and valleys and that there will be no reclamation to the project for it will put the timber along the shore line under water and kill it so that the shore lines will be covered with dead trees for years to come. This paper mill could be located elsewhere at less cost to our nation.

When the conservationists of the country find out about this project you may be sure that there will be a nation-wide protest against it. We are going to call it to the attention of our members in our next bulletin.

Yours very truly,

DAVID HOVEY, *Secretary.*

SUPERIOR NATIONAL FOREST RECREATION ASSOCIATION,
Rockford Ill., August 8, 1925.

MR. WILLIAM H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: Mr. Riis has asked that I forward to you the enclosed copy of a letter to the Acting Forester at Washington, regarding the international boundary water question.

Thanking you for your past favors, I am,

Yours very truly,

DAVID HOVEY, *Secretary.*

AUGUST 8, 1925.

Mr. L. F. KNEIPP,

Acting Forester, U. S. Forest Service, Washington, D. C.

DEAR MR. KNEIPP: Your letter of July 31st awaited me on my return after two months spent in the Superior national forest. I beg to advise you that I have made the entire route of the boundary waters from Fort Frances, Ont., clear down to the big Saganaga and Saganagons lakes, which are part of the Backus project to use as storage basins for a pulp mill to be built on Canadian soil with American capital. If the Forest Service cares to inform itself of the tactics employed by Mr. Backus in avoiding his obligations as a taxpayer and citizen to the Province of Ontario and the City of Fort Frances; his manner of electing into power those who will serve him; all his arbitrary methods in appropriating everything which he deems profitable to his corporation, it might hesitate to entertain any proposals of whatever nature coming from any interest he represents. We regret very much that the Forest Service seems to be not in a position to represent the real owners of the forest in a manner unbiased by motive other than that for the greatest good for the greatest number.

I am very sorry to have mislaid copies of certain data on file at your Ely office which shows conclusively the Backus methods in his dealings with the U. S. Forest Service in obtaining what he seeks and which leaves us no choice in the matter but to go out and seek assistance from the people of the United States.

This matter has been projected on an unsuspecting public, very quietly, just prior to the opening up of our most promising national playground of the middle west, and any decision affecting the future of this playground is of greater importance than that which might be reached at the meeting called at a town controlled wholly by the interests of the petitioner. I can not help feel that if Mr. Backus foresees the value of these vast reservations for his corporations in the years to come how much more should we as a nation foresee their value.

As to the small area of publicly owned lands to be flooded, would advise that the survey crew now located on Vermilion lake has reached a point six miles removed from the shores of this small lake alone and no doubt your figure is entirely too small to even cover the damage done to a slight portion by the project. No doubt the supervisor at Ely has informed you that crews are today testing the new dam site at Loon river for the foundation of the proposed dam to be raised there, which seems to indicate a little more than ordinary interest on the part of Mr. Backus to push ahead with all possible speed.

Our association does not want to be placed in a position of criticising the utilization of natural resources just because it might not harmonize with personal sentiment. We should rather line up in favor of supporting projects of this nature where it can be conclusively proven that the utilization is of greater value to the nation than that found recreationally but we do not intend to further the scheme of any high handed corporation. After a careful personal survey of the situation we are not convinced that the time has arrived to utilize these resources as intended by the Backus interests and therefore protest against the stand taken, as outlined in your letter, by the Forest Service.

I do not know what arrangements can be made for a representative of our organization to be present at International Falls but it does seem to me

that the U. S. Forest Service should not give its approval to a project on which it has had so little opportunity to inform itself.

The Minnesota State Forest Service has protested to the International Joint Commission against giving consideration to the application until their department shall have had opportunity to review the evidence submitted to them and I trust that the U. S. Forest Service will proceed no less prudently.

Appreciating your own personal interest in this matter, I am.

Very sincerely yours,

PAUL B. RIIS, *President.*

WASHINGTON, August 15, 1925.

Mr. DAVID HOVEY,

Secretary, Superior National Forest Recreation Association,

P. O. Box 432 Rockford, Ill.

DEAR SIR: I am in receipt of your letter of the 8th instant enclosing at the request of Mr. Riis copy of his letter to the United States Forest Service, Washington, D. C., which copy will be placed before the members of this Commission.

I note Mr. Riis' comment that "any decision affecting the future of this playground is of greater importance than that which might be reached at a meeting called at a town controlled wholly by the interests of the petitioner." It is possible that Mr. Riis does not refer to the meeting to be held by this Commission at International Falls on September 28, 1925, since there is no petition from any interest to be heard by this Commission at that meeting.

The Commission is at liberty to fix its place of hearing at any point in the United States or Canada, but decided upon International Falls as the most convenient location for attendance by interested parties. If Mr. Riis does refer to the meeting of the Commission at the time and place named above, I would appreciate advice as to any town other than International Falls which is more conveniently located from the standpoint of finance and time for attendance by the local settlers, small commercial fishermen, etc., etc., who are supposed to be directly and daily interested in the matter under investigation and whose views as well as those of others better able perhaps to attend at some more distant point this Commission desires to secure.

Formal notice of the meeting of September 28th is enclosed herewith.

Very truly yours,

WM. H. SMITH, *Secretary.*

ST. LOUIS COUNTY CLUB,

August 16, 1925.

SECRETARY, INTERNATIONAL JOINT COMMISSION,

Washington, D. C.

DEAR SIR: As the head of the largest civic club in northern Minnesota which is leading the fight against the petition of Fort Frances Pulp & Paper Company to divert certain waters along the Minnesota-Ontario boundary, which petition is to be heard September 28th, I would thank you for full and complete information by return mail covering all phases of this matter. Especially do I desire to submit at a public mass meeting which is to be held August 25th all data which you have for publication, a brief statement of the rights of settlers, and communities affected, and a brief synopsis of the law defining the rights

and jurisdiction of the federal departments and the single state. You probably have many requests now for this same information, but I assure you that all other efforts of individuals and associations will be coordinated and subordinated to the work of this club which will have general charge of our end of the matter. Please therefore let me have at the earliest possible moment everything that will be of interest, what steps will be necessary to be taken, in fact anything that will guide us in properly and courteously presenting our interests.

This proposition is of paramount interest to all northeastern Minnesota at this time and surpasses in importance all other questions.

Thanking you very kindly for a prompt reply to this communication, I remain,

Yours truly,

GEO. H. LOMMEN,

Chairman, Civic & Commerce Div. St. Louis County Club.

WASHINGTON, August 21, 1925.

Mr. GEORGE H. LOMMEN,
*Chairman, Civic and Commerce Division,
St. Louis County Club, Virginia, Minn.*

DEAR SIR: Replying to your communication of the 16th instant, I beg to inform you that the International Joint Commission has before it no petition or application from any person or corporation for any development project in the boundary waters between Minnesota and Ontario. I am therefore unable to give you any information regarding a petition of the Fort Frances Pulp & Paper Company to divert certain waters along the Minnesota-Ontario boundary, to which you refer.

The International Joint Commission has before it a series of questions jointly referred to it by the Governments of the United States and Canada for investigation and report to those governments with conclusions and recommendations. Upon these questions the Commission will hold a hearing at International Falls, Minn., on September 28, 1925.

The questions referred to are fully set forth in a notice of that hearing, copy of which is enclosed herewith.

Very truly yours,

WM. H. SMITH, *Secretary.*

MINNEAPOLIS, MINN., Sept. 2, 1925.

INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

Re: The control of international water

GENTLEMEN: It has been called to my attention recently that there is to be held at International Falls in the immediate future a meeting to discuss the control of the international water as projected by the Backus Brooks interests.

As I am very familiar with this territory, having hunted and fished off and on in it for the last twenty years, I protest against this proposed devastation for selfish interests. This playground is the heritage of the people of Minnesota and its value as such has only recently become apparent in a slight degree to the people at large. While there is still time, prevent that which it would take a century to undo.

Yours very truly,

W. H. TUSLER.

VIRGINIA ROTARY CLUB,
Virginia, Minnesota.

Whereas, it has been brought to our attention that there is now up for consideration petition of the Fort Frances Pulp & Paper Company to flood the entire lake district of northern Minnesota; and

Whereas, the Virginia Rotary Club has been advised from reliable sources that such permission, if granted to said company, would be against the best interest of the people in this vicinity; and

Whereas, a public hearing has been called to be held at the municipal court rooms in the City of Virginia at 2.00 P. M. August 25th, 1925, to consider this matter:

Therefore be it resolved, that the Rotary Club of Virginia enter a formal protest against such permission being granted to said company; and

Be it further resolved, that a copy of this resolution be sent to such persons and organizations who have it within their power to grant said permission.

Resolution adopted August 19th, 1925.

E. T. DUFFIELD, *President.*

H. J. SCHARR, *Secretary.*

VIRGINIA MINNESOTA CHAPTER,
Izaak Walton League of America,
Virginia, Minn., August 21, 1925.

Mr. Wm. H. SMITH,

Secretary International Joint Commission, Washington, D. C.

DEAR SIR: Attached hereto you will find a copy of a resolution which was adopted at a meeting of the Virginia Chapter of the Izaak Walton League held at Virginia August 17th. I think this is a fair expression of the general opinion in this vicinity concerning the proposal of the Fort Frances Pulp & Paper Company to raise the water levels of the various lakes along the Canadian border, that is, between Ontario and Minnesota.

We trust that the sentiment of the people of this section will be considered when this matter comes up for discussion at the meeting to be held at International Falls on September 28th and also any future meetings which may be devoted to consideration of this project.

Yours very truly,

ARTHUR J. MORELL, *Secretary.*

RESOLUTION

Resolved by the Izaak Walton League of Virginia, Minnesota: That

Whereas, a petition has been filed by the Backus-Brooks Lumber Company to secure permission from the International Waterway Commissioners for authority to construct dams on a number of lakes along the boundary line between Canada and the United States; and

Whereas, reports indicate that construction of such dams would result in raising the water level of different lakes to a depth of from fifteen to seventy-five feet; and

Whereas, such dams would result in submerging of islands, killing of timber, flooding of lands, destroying the beauty of same, and injury to property owners and destroying the fishing conditions in said lakes.

Now Therefore, it is hereby resolved, That this club is unalterably opposed to the granting of said petition, and the flooding of said lakes, and hereby petitions the commission having said matter in charge to deny said petition, and the officers of this club are hereby authorized as an executive committee to take any further proceedings necessary in their opinion to carrying out this resolution.

ARTHUR J. MORELL, *Secretary.*

WASHINGTON, August 25, 1925.

Mr. ARTHUR J. MORELL,
*Secretary Virginia Minnesota Chapter
Izaak Walton League of America, Virginia, Minn.*

DEAR SIR: Receipt is acknowledged of your letter of August 21, 1925, transmitting copy of resolution by the Izaak Walton League of Virginia, Minn., in opposition to approval of a petition "filed by the Backus-Brooks Lumber Company to secure permission from the International Waterway Commissioners for authority to construct dams on a number of lakes along the boundary line between Canada and the United States." Your letter and the resolution will be placed before the International Joint Commission as representing the attitude of your membership toward raising the elevation of the waters referred to.

As a matter of fact, however, the International Joint Commission has before it no application from any source for approval. The Commission has before it for investigation and report a series of questions referred by the Governments of the United States and Canada, copy of which is enclosed herewith for your information. The hearing to be held by the Commission at International Falls, Minn., on September 28, 1925, is upon these questions.

Very truly yours,

WM. H. SMITH, *Secretary.*

TOWN OF FORT FRANCES,
Fort Frances, Ont., June 10, 1925.

THE SECRETARY, INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

DEAR SIR: I enclose herewith for the attention of the International Joint Commission a copy of resolution passed at a convention of citizens which met at Fort Frances recently to discuss the levels of Rainy lake, a matter in which they are vitally interested.

Yours respectfully,

J. W. WALKER,
Clerk of Fort Frances.

P. S. A similar copy is being forwarded to the Commission at Ottawa, Ont.

RESOLUTION TO THE INTERNATIONAL JOINT COMMISSION, OTTAWA, CANADA,
WASHINGTON, D. C. UNANIMOUSLY ADOPTED BY DELEGATES TO AN INTERNATIONAL CONVENTION OF CITIZENS AT FORT FRANCES, ONTARIO

Whereas, it has been brought to our attention that it is proposed to raise the level of the water in Rainy lake from 497 B. M. to some higher level for the purpose of storing a greater head of water, and

Whereas, any increased level of this lake will work irreparable injury to the agricultural, industrial, municipal, scenic, recreational, and other public and private interests centered in and about these international waters, and

Whereas, it is believed that no economic benefit of a permanent nature will accrue to any individual, corporation, or other interest from the impounding of these waters, which cannot be obtained by more economical and less injurious storage and control plans, and

Whereas, the expense of securing necessary engineering data to determine the facts is prohibitive to private individuals and to the municipalities affected.

Now therefore be it resolved, that we, the undersigned committee, representing the interests centered in and about Fort Frances, Ont., and International Falls, Minn., and the Rainy lake basin, in convention assembled at Fort Frances, Ont., this 27th day of May, 1925, respectfully represent to your honorable body that the greatest good to the greatest number will be better conserved by not raising the present level of Rainy lake, and we respectfully request that your honorable body made no recommendation favoring any change in the said lake level; and

Be it further resolved, that a thorough investigation be conducted by the engineering staff of your honorable board, in conjunction with the engineers of the Public Works Department of the Dominion of Canada, and of the War Department of the United States.

Respectfully submitted, on behalf of the Convention.

M. A. MALONE,
J. W. MATHEWS,

Representing the lumbering industries.

P. A. DUNSMORE, M. D.,
JAKOB HVOSLEF,
EMERT C. OBERHOLTZER,
A. G. MURRAY,
S. H. WARNER,

Representing the owners of islands and summer homes.

DAVID HURLBURT,
FRANK H. KEYES,
ANDREW JESPERSEN,

Representing the agricultural interests.

W. S. ELLIOTT,
J. V. HOLMES,

Representing the municipal interests of the Town of Fort Frances.

INTERNATIONAL FALLS, MINN., June 12, 1925.

INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

GENTLEMEN: At the request of the secretary of a mass meeting of citizens held at International Falls last evening to protest against any change in the water level of Rainy lake, I am enclosing herewith a resolution prepared on that occasion.

This is a matter that seriously concerns a multitude of people in this locality.

Yours very truly,

DAVID HURLBURT.

RESOLUTION ADOPTED AT A MASS-MEETING HELD AT INTERNATIONAL FALLS,
MINNESOTA, RELATIVE TO RAISING THE LEVEL OF RAINY LAKE ABOVE HIGH
WATER MARK

Whereas, a movement is now on foot to raise permanently the level of the water in Rainy lake above high water mark; and

Whereas, the present controlling works at International Falls have been amply sufficient to impound all the usual precipitation in the Rainy lake basin; and

Whereas, any elevation above high water mark will destroy beaches, ruin many summer homes both on islands and on shore, overflow meadow lands, inundate districts now devoted to profitable farming, destroy forest areas, and result in incalculable injury to public and private riparian rights; and

Whereas, there are at present many hydro-electric sites within a practicable radius of present usability, the development of which will be severely handicapped by any alteration in the level of the water in this lake above high water mark.

Now therefore be it resolved, that it is the sense of the citizens of this community, in mass-meeting called by the common council thereof, that no change be made in the water level of Rainy lake, but that investigation should be renewed by a corps of competent engineers for the purpose of considering recent developments and present conditions on this lake, and that we remain firm in the belief that such an inquiry will fully substantiate the verity of the position we have here assumed, and

Be it further resolved, that a copy of this resolution be forwarded to the International Joint Commission at Ottawa, Canada, and at Washington, D. C., to each of the Senators from the State of Minnesota, and to the Representatives in Congress from the sixth and eighth districts of Minnesota.

The foregoing is a true and exact copy of the resolutions unanimously adopted at a meeting of the citizens of the community of International Falls, held in the city hall on June 11th, 1925.

GLADYS MCPEEK, *Secretary.*

INTERNATIONAL FALLS, MINN., *August 14, 1925.*

INTERNATIONAL JOINT COMMISSION,
Washington, D. C.

GENTLEMEN: Recently I asked you for a copy of "application made by Mr. E. W. Backus for permanent sites extending from Little Vermilion Lake and Big Sagana, along the international boundary," to which you replied that the "International Joint Commission has before it no application of any description from Mr. Backus."

I am enclosing a portion of the August 13th issue of the Duluth News Tribune which carries a copy of the application of Mr. Backus to Minister of Lands & Forests, etc. Is it the purpose of the International Joint Commission at its hearing in International Falls on September 28th to consider in any way the requests made by Mr. Backus, as shown by the enclosed clipping?

I am making the foregoing inquiry because of the uncertainty that seems to prevail in this neighborhood as to just what matters will be considered on September 28th. We have been led to believe that at this time the Commission would not receive testimony, but that it would make a reconnaissance, ascertain

when parties will be ready to present their case, and determine a time for the actual reception of evidence by all parties concerned.

If it may come within your province as secretary of the Commission to give us information pursuant to the tenor of the foregoing queries, we shall be very grateful.

Very truly yours,

DAVID HURLBURT.

[The Duluth News Tribune. Thursday Morning, August 13, 1925]

RIGHT TO SHIFT BOUNDARY LAKE LEVELS FOUGHT. SETTLERS, SUMMER CABIN OWNERS RALLY TO OPPOSE DAM PROJECT ALONG BORDER

Northern Minnesota settlers, owners of summer cabins, and all who are interested in the lakes and canoe trails of the Arrowhead region have suddenly awakened to the significance of the plans of the Fort Frances Paper & Pulp Company to alter the levels of virtually all of the boundary way waters touching this state.

It was not until the last few days that information regarding the plans of the company has been given any general circulation, but already a movement is being started to block them. It is likely a general meeting of protest will be called by the Arrowhead committee, and that such organizations as the Izaak Walton League and the commercial clubs of the various range towns will be asked to participate.

LONG FIGHT SEEN

It is recognized that a long fight is in progress. The matter is one of great importance to the company, which is controlled by E. W. Backus. It is a question for the International Joint Commission to decide and the Canadian members are likely to be friendly it is pointed out, for the reason that a big industrial development will take place across the border, while most of the harm will be done on the American side.

The project will cost from \$2,000,000 to \$3,000,000 and will take some three years to complete. It involves, among other things, the raising of the level of Rainy lake by three feet; the raising of the level of Little Vermilion lake by 72 feet; the raising of the level of Loon lake by 33 feet; the raising of Lac La Croix 12 feet.

The water in such lakes as Namakan, Kabetogama, and Crane will be correspondingly raised. In short virtually all of the boundary waters from Kettle falls to Gunflint lake will be affected. It is claimed that every shore line on all these lakes and rivers will be ruined; settlers' lands will be flooded; and the beauty of the country destroyed for the next 25 years.

COPY OF APPLICATION

What the company seeks is told in the application it has on file with the Minister of Lands and Forests at Toronto. Here is a copy of the application:

AUGUST 25, 1920.

MINISTER OF LANDS AND FORESTS,

Surveys Department, Parliament Building, Toronto, Ont.

DEAR SIR: This application is for the right to construct dams at the outlets of the several lakes along the international water above Rainy lake for the control of the waters flowing into Namakan lake, as well as in cases

where power is available, the right to develop such power and erect power plants.

1. The right to construct and control a permanent masonry dam at the north outlet of Lac La Croix, where the water of Lac La Croix now ordinarily flows into Namakan river, and to divert this entire flow to the western outlet where it will then pass on to Namakan lake. The crest of said dam to be at elevation 1,205.

2. The right to construct a dam at the west outlet of Lac La Croix and the right to raise Lac La Croix and to overflow Ontario lands on the north side and the right to flood such falls as may be affected on the streams entering Lac La Croix by the dam so constructed at the west outlet of Lac La Croix, with its crest at elevation 1,200. The right to construct such power plants as may be necessary to utilize the flow of the stream at this point.

QUESTION OF LAKE LEVELS

3. The right to construct and control a permanent dam and to erect such power plants as may be necessary to utilize flow of stream at Rebecca falls at outlet of Iron lake. Crest of said dam to be not higher than elevation 1,225 above mean sea level. Right to overflow lands on Iron lake as will be affected by said dam and also any falls or rapids on streams entering Iron lake as will be affected at said dam. Present elevation of Iron lake and Bottle lake 1,217.

5. The right to construct and control a permanent dam at the outlet of Bottle lake. Crest of dam to be at elevation 1,230 to control Iron lake, as above.

6. The right to construct and control a permanent dam with crest elevation not higher than 1,260 feet, at the west outlet of Crooked lake, at the head of Curtain falls, and to erect such power plants as may be necessary to utilize and control the flow of the lake at this point. Right to overflow lands on Crooked lake and to overflow such falls as will be affected at the head of Crooked lake by dam so constructed at Curtain falls. Present elevation of Crooked lake 1,245.

7. Right to construct and control a permanent dam at the outlet of Basswood lake and to erect such power plants as may be necessary to control the flow of said lake at this point. Crest of dam not to be higher than elevation 1,305 above mean sea level. Right to overflow lands on the shores of Basswood lake, as may be affected by said dam. Present elevation of Basswood lake 1,300.

8. Right to construct and control a permanent dam at the outlet of Birch lake with a crest not higher than elevation 1,360 above mean sea level and to overflow such lands in Canada as will be affected by said dam, including flowage on Carp lake. Present elevation of Carp lake 1,357.

DAM ON STURGEON LAKE

9. The right to construct and control permanent dam at the outlet of Knife lake. Crest of said dam not to be higher than elevation 1,420. Right to flow such lands in Canada as will be affected on the north shores of Knife and Cypress lakes by said dam. Present elevation Knife and Cypress lakes, 1,385.

10. The right to construct and control a permanent dam for storage and power purposes at the outlet of Sturgeon lake, and to control the flow of Maligne river at this point. Crest of said dam not to be above elevation 1,250 above sea level. Right to flow lands on shores of Sturgeon lake and

to flow out any falls on streams entering Sturgeon lake that may be affected by dam at said elevation. Present elevation of Sturgeon lake, 1,220.

11. Right to construct and control a permanent dam for storage purposes at the outlet of Kwynipi lake. Crest of said dam to be not over 30 feet above present normal water elevation. The normal water elevation being the elevation taken at a time when Saganaga lake is at elevation, 1,432.

12. The right to construct and control a permanent dam at outlet of Saganagons lake and to control the flow into Maligne river at this point. Crest of said dam not to be above elevation 1,450 above mean sea level. Right to flow such lands in Canada bordering on Saganagons lake, Saganaga lake and North Light lake as may be affected by dam with crest at elevation 1,450. Present elevation of Saganagons lake 1,432. Present elevation of Saganaga lake 1,432. Present elevation on North Light lake 1,441.

Respectfully submitted,

FORT FRANCES PULP & PAPER CO. LTD.,
E. W. BACKUS, *President.*

WASHINGTON, August 17, 1925.

HON. DAVID HURLBURT,
International Falls, Minn.

DEAR SIR: I have your letter of the 14th instant, enclosing portion of the Duluth News Tribune of August 13th, containing an article regarding an application made by Mr. E. W. Backus to the Minister of Lands and Forests of the Province of Ontario, and giving the text of said application.

It appears from the newspaper article that the application of Mr. Backus is pending before a department of the provincial government of Ontario. Applications for the granting of privileges in the boundary waters between the United States and Canada come to the International Joint Commission either through the United States Government or the Government of the Dominion of Canada. If the application referred to reaches this Commission it will have passed from the provincial government and through the hands of the Dominion Government. I repeat the statement made in my letter to you of the 8th instant, that the International Joint Commission has before it no application of any description by Mr. Backus.

Consideration will be given by the Commission when it meets at International Falls on September 28th only to the questions referred jointly by the two governments on February 27, 1925. A copy of those questions was contained in a formal notice of said hearing mailed to you on the 15th instant; an additional copy is enclosed herewith.

Regarding your understanding that at the hearing on September 28th the Commission would not receive testimony but would make a reconnaissance, ascertain when the parties would be ready to present their case, and determine a time for the actual reception of evidence, I would respectfully call attention to the publication in May last, once each week for three weeks, in three Minnesota newspapers, of notice of the pendency of the said questions before the Commission and the intention of the Commission to hear interested parties; and, further, to the issuance of formal notice some six weeks in advance of September 28, 1925, of the hearing to be held on that date. It is therefore expected that at the hearing opening on September 28th considerable information will be presented. Whether that hearing will be final or not I am unable to state. Developments no doubt will guide the Commission in its decision on that point.

Very truly yours,

WM. H. SMITH, *Secretary.*

HENNEPIN COUNTY SPORTSMENS CLUB,
Minneapolis, Minn.

To the Honorable THE INTERNATIONAL JOINT COMMISSION.

GENTLEMEN: In behalf of the Hennepin County Sportsmen's Club, which has a membership of over 3,000 citizens, residents of Minneapolis and vicinity, the undersigned, as officers of the club, and in pursuance of resolution adopted so to do, hereby respectfully object and protest against any action by your honorable body authorizing the construction of the dams petitioned for by the Fort Frances Pulp and Paper Company, Ltd., dated August 25, 1920, and now before your body for consideration.

Our objection to any further interference with the natural flow of the boundary waters between our state and Canada is not based solely on the ground that we desire to conserve animal and fish life to further the sport in which our association is more or less interested; it is principally from our standpoint as citizens of this great state that we feel that the natural beauties and the present condition of the boundary region should not be vandalized and destroyed merely for individual gain and profit.

Our state has expended large sums of money for the establishment and maintenance of parks and highways in that section of the state and for the conservation of the natural forest that still remains in that region, and the membership of our club has borne no small fraction of the taxes devoted to these purposes. We cannot believe that as public spirited a body as has been selected by the two neighboring nations to conduct our boundary interests in a manner most conducive to the welfare of the two nations, will sacrifice one of the greatest cultural and social assets that this state has to gratify mere industrial ambition.

From reliable authority, we are advised and believe that if any of the dams proposed be authorized and erected, it will mean the destruction of immense areas of most valuable forest land, and probably the annihilation of many of the valuable species of fish in the lakes affected, by reason of the decay of the inundated trees and vegetation.

Very respectfully submitted,

HENNEPIN COUNTY SPORTSMEN'S CLUB,
 E. L. EYLAR, *President.*
 H. J. LOUCKS, *Secretary.*

SEPTEMBER 25, 1925.

—————
 KIWANIS CLUB,
Hibbing, Minn., September 26, 1925.

INTERNATIONAL JOINT COMMISSION,
International Falls, Minn.

GENTLEMEN: The following is a resolution passed by the Kiwanis Club of Hibbing, at our meeting September 23, 1925. The secretary was instructed to send this to you at once.

RESOLUTION

Whereas, it is proposed to raise the permanent water levels of many of our boundary lakes by the construction of masonry dams for the purpose of providing increased storage capacity to furnish hydro-electric power;

Whereas, such a proposed increase in water levels of these lakes would necessarily affect a large area; and

Whereas, the state and citizens of Minnesota have not had sufficient time in which to prepare all necessary data and to get thoroughly over the ground.

Therefore be it resolved, by the Kiwanis Club of Hibbing, that an extension of time be granted by your honorable Commission for a more thorough study of this project.

Respectfully submitted,

F. Z. DONOVAN, *Secretary.*

HIBBING COMMERCIAL CLUB,
Hibbing, Minn., September 26, 1925.

To the INTERNATIONAL JOINT COMMISSION,
International Falls, Minn.

RESOLUTION

Whereas, it is proposed to raise the permanent water levels of many of our boundary lakes by the construction of masonry dams for the purpose of providing increased storage capacity to furnish hydro-electric power;

Whereas, such a proposed increase in water levels of these lakes would necessarily affect a large area; and

Whereas, the state and citizens of Minnesota have not had sufficient time in which to prepare all necessary data and to get thoroughly over the ground,

Therefore be it resolved, by the Commercial Club of Hibbing that an extension of time be granted by your honorable Commission for the more thorough study of this project.

Respectfully submitted,

HIBBING COMMERCIAL CLUB.

SUPERIOR NATIONAL FOREST RECREATION ASSOCIATION,
Rockford, Ill., Sept. 16, 1925.

INTERNATIONAL JOINT COMMISSION,
c/o DAVID HURLBURT,

International Falls, Minn.

GENTLEMEN: The Superior National Forest Recreation Association is greatly concerned with what purports to be an investigation of your honorable body of questions dealing specifically with the most advantageous uses of waters flowing into and from Rainy lake, the regulation of levels thereof, the regulation of the levels of Namakan lake or any and all waters above Namakan lake for storage purposes.

The writer has just completed a tour of the boundary waters above Namakan lake, spending two months in this quest to look over the many lakes affected. Commencing at Rainy lake these boundary waters reach from International Falls on the west through approximately 27 townships to Watab lake on the east, all flowing westward and emptying finally into Rainy lake. The water supplied comes from a large area of the Superior national forest, flowing from and through a large publicly owned domain. Additional supplies come from another public area, that of the Quetico park in Ontario, tributaries of waters that make up what is known as Hunters Island which empty into Martins bay in Lac La Croix through the channels of Maligne river.

Most of these lakes are in all stages of forest growth to the water's edge, island studded, and of indescribable charm.

Investigation held by your honorable body is highly significant because of the fact that the writer has seen survey crews on widely scattered parts of

the territory described above for several years past, indicating a keen commercial interest. Rumors of water power projects have been strengthened and substantiated through accidental sight of an application to the Minister of Lands and Forest Survey Department, Toronto, Ont., dated Aug. 25, 1920, of the Fort Frances Pulp & Paper Co., Ltd., Fort Frances, Ont., signed by its president, E. W. Backus. The waters mentioned in this application are those waters enumerated before in this letter, running from the western end of Rainy lake to Big Saganaga or beyond, a distance of approximately 27 townships. The present investigation seems to indicate desire of an analytical examination of each and every factor affected by a change of water levels of Rainy and Namakan lakes.

That this, however, is not the sole intent, can readily be seen by the appended words: "To provide storage facilities upon all or any of the boundary waters above Namakan lake."

We therefore deal with the boundary waters lying between Canada and the United States, from International Falls on the west to Watab lake on the east, waters on this side of the boundary largely owned by the citizens of the United States because of the public domain in the Superior national forest, and also by the citizens of the Dominion of Canada because of public domain in the Quetico park. We assume the individual rights of both should be given first preference.

In their present condition these lands are indispensable and invaluable from a standpoint of forestry and recreation, the latter phase to be stressed because of the ideal location of this area from the standpoint of population and also because of the unique character of the land, irreplaceable in all the lands of the United States. Any alternation thereof must be considered from the standpoint of public interest first. Exploitation by small private owners of the land of a friendly and unwary neighbor can no longer be permitted. The big neighbor is entitled to know the minutest detail of the little neighbor's schemes in so far as it affects his own future without shouldering the burden of expense to learn what his small neighbor intends to do to him. The tail should not be permitted to wag the dog.

E. W. Backus, the small neighbor, has clearly demonstrated and established a principle when through dillydally methods he evaded settlement with the United States Forest Service over thirty acres of timber land on Namakan lake. Such tactics make apprehensive and nothing short of gilt-edged guaranty that in no wise can be violated, can ever assure a sadder and wiser public.

Logs floated upon these impounded waters to the contemplated pulp and paper mill on the Canadian side of the boundary waters, at Fort Frances, in part will be cut from American shores and resold to us in the form of paper under the present high tariff. This certainly is unsound from a business standpoint.

But truly, does the Fort Frances Pulp and Paper Company seek to raise the levels of Rainy, Namakan, and Kabetogama lakes a few paltry feet merely to destroy the potentialities of the great storage reservoir found in the innumerable lakes making up the majority balance of the boundary waters running through 27 townships? That question must be answered first to establish faith with the people of the United States.

The project as outlined in the application cited, to which we are pleased to cling as the foundation on which the present investigation is based, may be of immeasurable public benefit. If so, we cannot know too much about it, the sooner the better. Nothing can be gained by hasty and superficial examina-

tion, and we, as an association interested from the national field in the specific recreational development of Superior national forest, through parts of which these boundary waters flow, ask your honorable body, the International Joint Commission, to postpone any decision until such a time that every single factor has been placed in its true relation from a standpoint of the greatest good to the greatest number. We protest in the name of the people of the United States against any decisions reached at this time that will advance the interest of an individual against that of a nation.

Thanking you for your very kind consideration and hoping that we are not making a thankless task harder, we are,

Respectfully yours,

SUPERIOR NATIONAL FOREST RECREATION ASSOCIATION,
PAUL B. RIIS, *Pres.*

ROTARY CLUB OF TWO HARBORS,
Two Harbors, Minn.

RESOLUTION

Whereas, Lake county and the whole of the northern section has a valuable asset in its beauty and utility as a playground which is adding materially to the value of its property through the popularity as a playground centre; and

Whereas, the plans of certain interests in seeking to establish new water levels in the streams and lakes of this area for the purpose of providing storage basins for water power projects will bring immeasurable damage to such assets without any compensating addition to this section in industry.

Be it resolved, by the Two Harbors Rotary Club that it is unalterably opposed to the granting of such application as has been made by the Fort Frances Pulp and Paper Co. which will be heard before the International Joint Commission at International Falls on September 28th, 1925.

Adopted this 23rd day of September 1925.

JAS. A. WALSTRON, JR., *President*,
JOHN J. LABSON, *Secretary*.

*To the Honorable Members of the International Joint Commission Washington,
D. C. and Ottawa, Canada:*

Whereas, your Commission has been asked to report upon all aspects of a plan to raise the levels of Rainy lake, Lake Kabatogama and of tributary lakes for the development of additional water power; and

Whereas, the power to be developed from contemplated control is to be concentrated chiefly on the Winnipeg river, at a distant point in Canada and solely for private profit; and

Whereas, Lake Kabatogama and several of the lakes affected by the above mentioned plan are wholly within the United States and therefore not international waters, it seems that then the despoilage for water power across the border puts the entire plan outside the pale of both American and Canadian ideas of justice; and

Whereas, the present authorized maximum level of Rainy lake and Lake Kabatogama is already above the natural high water mark, so clearly proven by the water killing of trees from fifty to one hundred years old; and

Whereas, any further increase in the water level would be highly destructive not only to timber, but to beaches, scenery and private and public property of all description; and

Whereas, the potential value of Rainy lake, Lake Kabatogama and their tributaries for summer purposes, tho' undeveloped, outweigh in importance, both because of their vast possibilities and public natures, any benefits to be derived from the development of private water power enterprises; and

Whereas, our State of Minnesota is spending hundreds of thousands of dollars to save and protect our forests with a slogan of the Buffalo and "are you going to do to our forest as you have done to me," and raising the water level of these lakes would destroy thousands of acres of timber land owned by the state or private owners and also would mean the destruction of the beauty spot of the State of Minnesota if not, of the United States;

Therefore be it resolved, that the Littlefork Commercial Club and other interested citizens record themselves as unalterably opposed to any further increase in the level of Kabatogama lake and Rainy lake or any other tributary lakes and in particular to the proposal now before the commission,

And be it further resolved, that this assembly respectfully petitions the honorable commissioners, in their capacity as guardians of public welfare, to throw the weight of their authority against the present contemplated control.

Adopted by the Littlefork Commercial Club at its meeting held Sept. 9th, 1925.

RESOLUTION TO THE INTERNATIONAL JOINT COMMISSION OTTAWA, CANADA, AND WASHINGTON, D. C. ADOPTED BY THE COUNCIL OF THE VILLAGE OF RAINER, RELATIVE TO THE PROPOSED CHANGE IN THE LEVEL OF RAINY LAKE

Whereas, it is proposed to raise the permanent level of Rainy lake three feet above high water mark for the purpose of providing increased storage capacity for power purposes at Kenora; and

Whereas, such a proposed increase in the permanent level of Rainy lake will do irreparable injury to the Village of Rainer, by destroying docks, washing away portions of streets, inundating low areas in and about the village, and practically destroy the village of Ranier as it is now situated; and

Whereas, the injury that will be sustained by persons here represented will be out of all proportion to the economic benefits sought to be accomplished by this excessive impounding of water in Rainy lake for storage purposes.

Now, therefore be it resolved, by the Village Council of Ranier, representing the unanimous sentiment of all persons living in this village, and property owners and lake dwellers residing in the vicinity thereof, that your honorable Commission cause an examination of the facts alleged in this resolution to be made before any final action in this matter is determined upon.

Respectfully submitted.

THE VILLAGE OF RANIER,
By PETER GIBBONS, *Mayor*,
By D. J. MCCARTHY, *Clerk*.

SEPTEMBER 26, 1925.

Mr. CLARK. Preliminary notice of the hearing was published, and I will ask the secretary to read it, together with a list of the papers in which it was published.

Secretary SMITH. The preliminary notice of the filing of the reference was published on the 22nd of May, 1925, in the United States

in the St. Paul Pioneer Press, the Minneapolis Journal, the Duluth Herald and the International Falls Echo, as follows:

RAINY LAKE LEVELS

PRELIMINARY NOTICE

By joint reference from the Governments of the United States and the Dominion of Canada there are pending before the International Joint Commission, for examination and report with conclusions and recommendations, certain questions regarding a determination of the levels of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake which would secure the most advantageous use of those waters and of their shores and harbors for domestic and sanitary purposes, for navigation purposes, for fishing purposes and for power, irrigation, and reclamation purposes. The object of this notice is to inform all interested parties from whom technical information has not been requested that, following receipt by the Commission of certain necessary technical and engineering data, public hearings in this matter will be held by the Commission at which all parties interested in the levels of these waters will be afforded an opportunity to appear and present their views. Published notice will be given in due time of the time and place of such public hearings.

WM. H. SMITH,

Secretary International Joint Commission, Washington, D. C.

Secretary BURPEE. The notice was published on the Canadian side in the Manitoba Free Press, the Kenora Miner News and the Fort Frances Times.

Secretary SMITH. The notice of the hearing is as follows:

NOTICE OF HEARING

RAINY LAKE LEVELS

The Governments of the United States and Canada on February 27, 1925, referred to the International Joint Commission, for investigation and report with conclusions and recommendations, the following questions:

Question 1. In order to secure the most advantageous use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes; and in order to secure the most advantageous use of the shores and harbors of both Rainy lake and the boundary waters flowing into and from the lake, is it, from an economic standpoint, now practicable and desirable, having regard for all or any of the interests affected thereby, or under what conditions will it become thus practicable and desirable—

(a) To regulate the level of Rainy lake in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,108.61 sea-level datum?

(b) To regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,120.11 sea-level datum?

(c) To provide storage facilities upon all or any of the boundary waters above Namakan lake?

Question 2. If it be found practicable and desirable thus (1) to regulate the level of Rainy lake, and/or (2) to regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls, and/or (3) to provide storage facilities upon all or any of the boundary waters above Namakan lake—

(a) What elevations are recommended?

(b) To what extent will it be necessary to acquire lands and to construct works in order to provide for such elevations and/or storage, and what will be their respective costs?

(c) What interests on each side of the boundary would be benefited? What would be the nature and extent of such benefit in each case? How should the cost be apportioned among the various interests so benefited?

Question 3. What methods of control and operation would be feasible and advisable in order to regulate the volume, use and outflow of the waters in each case in accordance with such recommendations as may be made in answer to questions 1 and 2?

Question 4. What interests on each side of the boundary are benefited by the present storage on Rainy lake and on the waters controlled by the dams at Kettle falls? What are the nature and extent of such benefits in each case? What is the cost of such storage and how should such cost be apportioned among the various interests so benefited?

Having carried on certain preliminary work with the engineers appointed by the two governments, the Commission will hold a public hearing in the court house at International Falls, Minn., on Monday, September 28, 1925, at 10 o'clock a. m., standard time, at which all interested parties are entitled to be heard and are invited to attend and present their views to the Commission.

WM. H. SMITH,
LAWRENCE J. BURPEE,
Secretaries.

Mr. CLARK. The notice of the holding of this meeting at International Falls was sent to a large number of parties whom it was thought might be interested. This list includes the following:

The Secretary of State, Washington, D. C.; State of Minnesota: The Governor, The Attorney General, The Auditor, Game and Fish Commissioner, Drainage and Water Commissioner, St. Paul, Minn.; Commissioner, General Land Office, Washington, D. C.; Forester and Chief, Department of Agriculture, Washington, D. C.; Commissioner of Indian Affairs, Washington, D. C.; E. W. Backus, Minneapolis, Minn.; Minnesota & Ontario Paper Company, Minneapolis, Minn.; Town Clerk, International Falls, Minn.; Town Clerk, Ranier, Minn.; Town Clerk, Baudette, Minn.; Town Clerk, Warroad, Minn.; Representative of Izaak Walton League of America, St. Paul, Minn.; George H. Selover, President, Minnesota Division Izaak Walton League of America, Minneapolis, Minn.; Charles E. Elmquist (representing Virginia and Rainy Lake Lumber Company), St. Paul, Minn.; C. E. Berkman, Chisholm, Minn.; Superior National Forest Recreation Association, Paul B. Riis, President, Rockford, Ill.; Superior National Forest Recreation Association, David Hovey, Secretary, Rockford, Ill.; Leonard McHugh, Duluth, Minn.; M. M. Oppgaard, Manager Associated Press, St. Paul, Minn.; C. J. Lenander, Minneapolis, Minn.; W. P. Hapgood, Indianapolis, Ind.; Dr. F. A. Dunsmoor, Minneapolis.

Minn.; Ernest O. Oberholtzer, Ranier, Minn.; Major H. G. Roberts, Davenport, Iowa; Henry D. Neely, Omaha, Nebr.; B. H. Dahlberg, Chicago; Dr. John O. Taft, Minneapolis, Minn.; Dr. N. H. Scheidrup, Minneapolis, Minn.; Hon. David Hurlburt, International Falls, Minn.; Halvord Robberstad, Village President, Warroad, Minn.; Shevlin, Carpenter & Clarke Company, Minneapolis, Minn.; Virginia & Rainy Lake Lumber Company, Virginia, Minn.; Jens Jensen, Ravinia, Ill.; Lane & Waterman, Davenport, Iowa; Hon. Robert N. Stanfield, United States Senate, Washington, D. C.; R. F. B. Cote, Camp Director, Camp Lincoln, Hubert, Minn.; Everett L. Millard, Chairman Conservation Council, Chicago; International Falls Echo, International Falls; Major C. F. Williams, District Engineer, St. Paul, Minn.; D. G. McLeod, Virginia, Minn.; J. H. Harper, President Minnesota Arrowhead Association, Duluth, Minn.; William H. Schirmer, Hibbing, Minn.; Sewell T. Tyng, New York (representing Ernest C. Oberholtzer, Ranier, Minn.); Rollo N. Chaffee, Duluth, Minn.; Dr. E. A. Thompson, International Falls, Minn.; J. W. Walker, Fort Frances, Ont.; Otis H. Gordon, County Auditor, International Falls, Minn.; S. G. Birkeland, County Auditor, Roseau, Minn.; W. H. Borgen, County Auditor, Duluth, Minn.; The Mayor, Warroad, Minn.; The Mayor, Roseau, Minn.; The Mayor, Ely, Minn.; The Mayor, Manitou, Minn.; Hon. Louis Enstrom, Malung, Minn.; Hon. A. N. Landby, Warroad, Minn.; Hon. Henrik Shipstead, United States Senate, Washington, D. C.; Hon. Thos. D. Schall, United States Senate, Washington, D. C.; Hon. A. J. Furlow, House of Representatives, Washington, D. C.; Hon. Frank Clague, House of Representatives, Washington, D. C.; Hon. August H. Andresen, House of Representatives, Washington, D. C.; Hon. Oscar E. Keller, House of Representatives, Washington, D. C.; Hon. Walter H. Newton, House of Representatives, Washington, D. C.; Hon. Harold Knutson, House of Representatives, Washington, D. C.; Hon. O. J. Kvale, House of Representatives, Washington, D. C.; Hon. Wm. L. Carss, House of Representatives, Washington, D. C.; Hon. Knud Wefald, House of Representatives, Washington, D. C.; Hon. Godfrey G. Goodwin, House of Representatives, Washington, D. C.; the following boat owners in the Lake of the Woods district: Harvey R. Selvog, Sophia Rader, M. & O. Power Co., F. H. Young, Booth Fisheries, and Warroad Mercantile Co., of Warroad, Minn.; J. W. Collins, Baudette, Minn.; Fred Lessard, Ranier, Minn.; Virginia & Rainy Lake Lumber Co., Virginia, Minn.; International Lumber Co., International Falls, Minn.; and St. Croix Lumber & Mfg. Co., Winton, Minn.; to the following commercial fishermen: William Bloom, E. J. Froemming, Aloise Hanisch, F. Hanisch, Peter Magnussen, Raymond Maurinski, Joseph McKowski, Lawrence Olson, Edward M. Olson, J. F. Peterson, Alf. Rasmussen, Geo. Stoffels, Everett Smith, Charlie Hendrickson, Mike Bohman, Frank Bohman, Emil Arndt, Christ Munson, Jos. Polus and Fred Lessard, Ranier, Minn.; F. McKay and Walter Kernanen, Virginia, Minn.; Aaron Peterson, Charles K. Puck, John Slatenski, Guy C. Quimby and J. F. Peterson, Ray, Minn.

Secretary BÜRPEE. The notice was sent to the following parties on the Canadian side of the boundary:

Hon. G. H. Ferguson, Premier of Ontario, Toronto; D. McDonald, Deputy Minister, Department of Game and Fisheries, Toronto; Hon. Frank H. Keefer, Legislative Secretary for Northern Ontario, Department of Lands and Forests, Port Arthur, Ont.; Hon. John Bracken, Premier of Manitoba, Winnipeg; Hon. R. W. Craig, Attorney General, Province of Manitoba, Winnipeg; His Worship the Mayor, Winnipeg; Jules Preudhomme, City Solicitor, Winnipeg;

Strachan Johnston, Secretary-Treasurer, Keewatin Power Company, Tilley, Johnston, Thomson and Parmenter, 255 Bay Street, Toronto; Lake of the Woods Milling Company, St. Sacrament Street, Montreal; Edward Anderson, Counsel for Winnipeg Electric Street Railway Company, Manitoba Power Company, Winnipeg; The Secretary, Department of Public Works, Ottawa; K. M. Cameron, Chief Engineer, Department of Public Works, Ottawa; The Secretary, Department of the Interior, Ottawa; The Secretary, Department of Marine and Fisheries, Ottawa; The Secretary, Department of Indian Affairs, Ottawa; W. A. Found, Director of Fisheries, Ottawa; C. H. Attwood, Water Power Branch, Department of the Interior, Winnipeg; J. T. Johnston, Director of Water Power and Reclamation, Department of the Interior, Ottawa; S. S. Scovil, Engineer, Department of the Interior, Ottawa; Sir Henry W. Thornton, President, Canadian National Railways, Montreal; The Secretary, Ontario and Minnesota Power Company, Fort Frances, Ont.; Border Lumber Company, Fort Frances, Ont.; R. Lockhart and Company, Fort Frances; Shevlin-Clarke Company, Fort Frances; Wilkie and Hamilton, Barristers, 302 Bay Street, Toronto; His Worship the Mayor, Kenora; His Worship the Mayor, Rainy River, Ont.; His Worship the Mayor, Fort Frances; E. E. Jess, Clerk and Treasurer, Corporation of the Town of Rainy River; J. Walker, Clerk of Fort Frances; E. J. Hooper, Clerk, Town of Kenora.

Mr. CLARK. The engineering features of the investigation will be conducted under the charge of Mr. S. S. Scovil, the engineer representing the Canadian Government, and Major R. W. Crawford, Corps of Engineers, U. S. Army, the engineer representing the United States Government. These gentlemen in person have been recently making a cursory examination of these waters. It is too early, of course, to give any definite results, but their observations may be of value to the Commission, nevertheless, when the proper time comes.

Mr. ELMQUIST. Mr. Chairman, may I address a preliminary inquiry to the Commission?

Mr. CLARK. Certainly.

Mr. ELMQUIST. In the original investigation of the Lake of the Woods levels considerable data were presented concerning Rainy lake and other waters. Are all of those records to be considered as a part of the record in this proceeding?

Mr. CLARK. I think the Commission will use such parts of them as are pertinent to this inquiry. Of course, the Commission has these records at hand and will gain information from them as well as from any other source from which they can secure information.

Mr. ELMQUIST. And they can be used by other parties as well?

Mr. CLARK. Yes, sir. If there are no more gentlemen present who desire to enter an appearance, we come to a question which has put the Commission into somewhat of a quandary, that is as to the order of these proceedings. As I said, there is no application before us. We have only the reference of the two governments which in itself makes no mention of any application having been made to either of the two governments. Nevertheless we must take notice—we cannot

avoid doing so—that some representation has been made to either one or the other government suggesting that in the interests of commercial and public welfare it would be well to change the level of the lakes as fixed by the Commission several years ago, either above or below the datum which was then fixed. We have been at some difficulty to determine how to proceed, but we have arrived at the conclusion that if any among those who have entered an appearance here to-day have the belief that these levels should be changed, they should be given the affirmative of the question and should present to the Commission such reasons as they may have for the belief that is in them. Therefore I think, Mr. Chairman Magrath, that it would be well to call upon anyone who is interested in a change to make a representation of their case. Therefore we will ask those who are in accord with the idea that a change in the levels should be made, to present what arguments or data they may have in substantiation of their views. Thereafter, those who differ from those views will be asked to present their ideas, and probably at the close opportunity will be given for the affirmative reply to such objections as shall then have been made.

Mr. BACKUS. I would like to be heard on this matter, but the data that I was having made last night and this morning have not been completed. Perhaps they will be sent to the court room here in half an hour, if you will proceed with some of the others in the meantime.

Mr. CLARK. If there are others in favor of a change from the present level of the lakes, we might occupy the time until Mr. Backus shall receive the data which he is having prepared.

Mr. ELMQUIST. It occurs to me that the chairman has correctly outlined the procedure that should be adopted at this investigation. There has been handed to this Commission by the respective governments a large commitment which covers the investigation of a very large public interest. Obviously, those who are interested in changing the water levels should have the affirmative of this proceeding and it is very difficult indeed for those who may be found on the other side of the question to proceed with any of their evidence until they know just exactly what they have to meet. I am speaking only for myself in making the suggestion that the power interests be first called upon to present their testimony in full, so that we may know what the ultimate development of this project will be should their suggestions be adopted by the Commission.

Mr. CLARK. The only difficulty I can see in your suggestion is that the Commission is not informed that any power interest desires a change.

Mr. ELMQUIST. If that is so, we are perfectly willing to adjourn and go back home.

Mr. CLARK. No. I said that the Commission is not informed that any power interest desires a change. We know that some interest desires a change. What that interest is we do not know, nor shall we know until it is developed perhaps at this meeting. Therefore I have stated in general terms that any of those in favor of a change should have the affirmative and then those who might consider that a change is not in the interest of the public welfare should be given an opportunity to be heard in full. Then in answer to those objections the affirmative should have as usual the right to present their further evidence.

Sir WILLIAM HEARST. We are charged with the duty of making a report in any event.

Mr. CLARK. Yes. I think you will readily see, from the statement I have made, the embarrassment under which the Commission enters upon this inquiry. We are not informed of any particular interest that is asking for any change in these levels. We do know that somewhere there is an interest or many interests which are desirous of a change. Therefore we have asked those interests to present those matters first. Are there any interests aside from Mr. Backus' who has stated that he will have to wait for half an hour or so?

Mr. LENANDER. As regards the statement of the chairman that anyone who desires a change in the water levels should be heard at this time, I am one of those who believe that the level ought to be lower. After having lived here for fifteen or more years, we find that the water level is too high. A great deal of beautiful shore line is inundated and through lack of regulation or other causes we consider the lake at the present stage is too high. We should like to prove that by the fact that many trees which have taken a century to grow are now standing in water from one to two feet. I have a statement here which I would like to file with the Commission.

Mr. CLARK. As I understand the matter the Commission of which I was not then a member several years ago, in deciding these levels, also put the waters under the control of a certain commission, did they not? Has that commission been operating?

Mr. LENANDER. No. The waters are not under any commission.

STATEMENT OF MR. C. J. LENANDER

To the Honorable, International Joint Commission of the United States and Canada, in the matter of the regulation of the water level of Rainy lake, lake Namakan and other boundary waters flowing into said lakes, to come up for public hearing at International Falls, September 28th 1925:

SIRS: Being deeply interested in the conservation of the natural resources of the lands and forests included in the district comprising the watershed of Rainy lake and other lakes tributary thereto, both as property owner and

as citizen of the State of Minnesota, and fully realizing that any change to raise the water levels of any of the lakes above referred to will greatly destroy the beauty of this region as well as cause the destruction of thousands of acres of valuable timber lands, and many islands in these lakes will be entirely inundated.

During the summer of 1916, with the dam at International Falls at the present level, the high waters of that season caused the waters to rise to a height never before attained since this region was settled by white men, and while the damages were minimized by the applicants now desiring to raise the level of Rainy lake an additional three feet or more, still the report made by the Honorable Charles A. Magrath and James A. Tawney, representing the International Joint Commission, dated May 31st 1916, and at that time the flood had not reached its highest proportions, in fact the waters of the lake continued to rise until about August 18th, 1916, but the report rendered at that time by the members of your honorable body shows conclusively that the town of Fort Frances was in great danger of being entirely inundated, and it is my belief that it was due to the accidental lodging of a large boom of logs against the railroad piers at the foot of the lake which held the water back sufficiently to save the town from great property loss.

As it was a great deal of damage was done, both by erosion and inundation and much land adjacent to the lake was under water all of the summer of 1916 and many settlers' homes and buildings were destroyed and much valuable timber killed.

The experience of 1916 should convince any one of the danger and impracticability of raising the level of Rainy lake.

As to this being a conservation measure, it would be of no value to the people of the commonwealth comprising this watershed; on the contrary it would do great damage and completely destroy, not only a great deal of private property, but the beauty and attractiveness of this region would be destroyed, and this would far outweigh any good it would accomplish.

As for additional water power, I beg to call your attention to the fact that no use has ever been made of the waters passing over or through the dam at Kettle falls, built more than ten years ago, and at this time, with the timber in the region tributary to this watershed nearly gone, or at least the supply cannot last at the longest more than a dozen years, it cannot be truthfully stated that additional power to grind to pulp the still remaining wood is urgently needed; on the contrary there is ample power to properly care for a much greater quantity of pulp limits than now available, and the longer it takes to consume the now remaining timber the longer will the people of International Falls and Fort Frances find employment at the mills, so the only conclusion that can be drawn for the reasons for the application for additional storage for the waters in this watershed must be the desire to improve water power conditions at some point below Rainy lake or Lake of the Woods, in which the citizens of this state have no interest, and for this reason they should not be subjected to any imposition or loss of their natural heritage.

We are fully cognizant of the great prestige both financial and political of the applicant corporation, and we fully realize that they are entitled to every opportunity to expand and realize their ambition in a commercial way, but we believe they have had every opportunity and advantage necessary to accomplish this granted to them both by the United States and Canada, and to now ask the privilege to practically inundate this, one of the greatest

beauty spots on the American continent, is not only uncalled for, but entirely unnecessary, and would do irreparable injury for all time to come to the peoples of the two commonwealths.

We have reason to think that the general public, who for years have used this part of the country for a summer playground are thoroughly aroused for fear of losing this their natural heritage, and while the inexorable axe of the lumber industries has done everything it could to destroy the forests, and done nothing to remedy this by reforestation, and forest fires following in the path of the logging crews have done much to lay waste this wonderful locality, still the recuperative power of mother nature has done much to remedy the ruthlessness of men, and the beauty and attractiveness still remain; but if the applicants to raise the water levels in practically all the lakes in this territory succeed in having their application granted, then the people of this generation will see much waste in young forest, destruction of game, and infringement of their rights as property owners and citizens, and no benefit to be derived by anyone, except the applicants, and they are not entitled to it.

The attached brief was prepared to be used at a hearing on April 9th, 1917, in the matter of the regulations of the water level on Rainy lake, but I believe the hearing was not had at that time, and as there are important data and exhibits attached to said brief, we desire to present it to the International Joint Commission at this time, to aid in determining the issue at hand.

Minneapolis, Minn., September 26th, 1925.

Very respectfully submitted,

C. J. LENANDER.

BRIEF

In the matters relating to the regulation of the levels of Lake of the Woods, Rainy lake, and Namakan lake, and also the formulation of rules to govern navigation on those lakes and their connecting water, to come up for public hearing at the city hall, at International Falls, Minn. on April 9th at 10.00 o'clock a. m.

To EDWARD H. SCHULZ,

Lieut. Col. Corps of Engineers of the United States, St. Paul, Minn.

DEAR SIR: Pursuant to notice from your office, dated at St. Paul, Minn., of a hearing in above entitled matter, I take pleasure in making the following statement bearing on flood conditions in Rainy lake, and inasmuch as considerable correspondence has passed between myself and the War Department of the United States, and also between the International Joint Commission, or individual members thereof, and as these letters have a direct bearing on conditions of the high waters in the lake above referred to, I desire to incorporate these letters, or such of them as have a direct bearing on the causes to the high flood waters, in this reply, in order that they may be considered in arriving at a final conclusion in this controversy.

My cause for complaint is the destruction by high flood waters occurring in Rainy lake at various times during the years of 1914 and 1916, principally the year of 1916, when our landing piers, buildings and a great amount of living timber were destroyed, said property being more particularly located in sections numbers thirteen (13) and fourteen (14) in township number seventy (70) north of range number twenty (20) west of the fourth principal meridian, also other lands located adjacent to above described land, located in St. Louis county and State of Minnesota, also a parcel of land consisting of an island

in the Township of Watten, which said island was partially inundated and by the action of the extremely high waters of Rainy lake in the spring of 1916, was cut in two parts and the trees growing on the beautiful ridge connecting the property were destroyed and partially washed away. The last named property being located in the Province of Ontario, Canada.

COPY OF LETTER TO SECRETARY OF WAR

WASHINGTON, D. C., *October 11, 1916.*

DEAR SIR: I am advised that the International Lumber Company of International Falls, Minn. have a petition before the International Joint Commission, for a concession to build additional booms in Rainy river, somewhere between their dam at the original falls, known as Koochiehing falls, and the Jack Knife bridge between Ranier and Fort Frances. The writer is familiar with this portion of the river and the logging and power companies now have practically the entire river and I am reliably informed that a great many clusters of pilings have been driven directly in the channel to be used to hold log booms, and these obstruct the navigation and make it both dangerous and sometimes impossible for boats to pass.

The writer wishes to give the logging and power companies every facility to handle their business but the interest of the rest of the people should also be taken into consideration, and the Rainy lake region is of sufficient importance to thousands of summer tourists, so their rights should be protected. The writer has considerable property on the lake, or rather we had before the power company flooded a large portion of it, but what is left of it is close to our hearts and we ask you to give us the needed protection.

I hope you will investigate this matter before it goes too far. Thanking you for the favor, I am,

Very truly yours,

C. J. LENANDER.

The following letter is a copy of a letter written by the Hon. James A. Tawney, to the Hon. Knute Nelson, senior Senator of the State of Minnesota, and reference in same is made to a letter written by Dr. F. A. Dunsmoor of Minneapolis and also a letter by C. J. Lenander. To the letter of the last named party Mr. Tawney makes especial reference, and as this correspondence was followed up with other letters relevant to the question at issue, I desire to make it a part of the record.

WINONA, MINN., *Oct. 20th, 1916.*

HON. KNUTE NELSON,

Alexandria, Minn.

MY DEAR SENATOR: I am just in receipt of yours of the 18th inst. enclosing letter from Dr. Dunsmoor and copy of a letter from his friend C. J. Lenander in re high water conditions on Rainy lake last spring and proposed construction of log booms in Rainy river above International Falls.

I note your request that the International Joint Commission do all they can to protect and "relieve the people along the international boundary waters from the annoyance and interference described in these letters." From the letters of the two gentlemen named, it appears that their cause of complaint is, first, on account of high water last spring, and second, on account of the obstructions to the navigation on Rainy river above International Falls.

Concerning the high water last spring, will say that Mr. Magrath and myself, as a committee of the Commission, went over the entire watershed the last week in May, when the water was rising and had almost reached its crest. We made a report to the Commission as you will remember, which on your own motion you had printed as a senate document for the information of the people along the boundary waters as to the cause and effect of this abnormal high stage of water. I am, therefore, enclosing three copies of this report; one for Dr. Dunsmoor, one for Mr. Lenander and one for yourself.

As to the obstruction now existing, or to be placed in the Rainy river above International Falls, I will say that the Rainy River, or International Falls Lumber Company, under authority of Congress and with the approval of the Chief Engineer of the War Department and the Secretary of War, propose to construct a log boom on our side of the river. This cannot be done, however, without the approval of our Commission, because it affects the level and use of waters on the other side of the boundary. For the purpose of securing our approval, the lumber company has made application to the Commission. At our recent meeting in Ottawa, we entered an order extending the time until November 1st, for the City of Fort Frances or any other party on either side, to file, under our rules, a reply statement to this application. The time and place for hearing the applicants and those who are opposed to our granting such approval has not yet been fixed. This is entirely in the control of the chairmen of the Commission. On our side the chairman, as you know, is Senator Obadiah Gardner, Rockland, Me. No doubt, the chairman will fix a time and place that will be convenient for those interested in the subject matter of the application.

As you know, there have existed for many years, questions and matters of difference between Canada and the United States respecting the control and use of these international boundary waters. Some time ago, at the joint request of both governments all of these questions and matters of difference were referred to the Commission for investigation and a report, including our conclusions and recommendations for the settlement of those international disputes. Owing to the fact that neither country had surveyed the drainage area of the Lake of the Woods, which is 26,750 sq. miles, and had previously collected very little engineering data concerning precipitation, lake levels, runoffs, etc., the time necessary to conduct and conclude this investigation has been much greater than it otherwise would have been.

The engineering work, however, is about complete and the Commission is now engaged in making its report to the two governments. We hope to be able to submit conclusions and recommendations that will be satisfactory to both governments and that will result in a satisfactory adjustment of all questions and matters of difference between them that have grown out of the existing control and use of these waters, or that might result from any future control and use of same.

I note Mr. Lenander's suggestion that there should be a senatorial investigation of all these matters. It is altogether probable that Mr. Lenander has no conception of the magnitude of an undertaking of this kind, and is not familiar with any part of this immense watershed, except the very small part with which he is familiar on Rainy lake. The Commission hope to complete their final report and submit the same to the two governments within a few months.

Owing to conflicts as well as the magnitude of interests in both countries that are involved in the control and use of these 300 miles of boundary waters,

were intricate and more important problems have been presented to our Commission than in any other matter it has considered since its organization.

One of the chief causes of the trouble is that, except the interests of navigation, almost all of the benefit derived from the use of these international waters is on the Canadian side, and by far the greater part of the injury without benefit is on the American side. Nevertheless, the Commission, composed, as you know, of citizens of both countries, is doing everything it possibly can to reconcile these differences and secure unanimous conclusions and recommendations with respect to past control and use, as well as the future control, use and regulation of the levels of these waters.

Thanking you for sending me Dr. Dunsmoor's letter, and assuring you that everything that can be done consistently with the rights of all, not only in Canada but in the United States, that will protect the people along these boundary waters from annoyance, interference or loss, will be done.

I remain,

Very sincerely yours,

J. A. TAWNEY.

The following is a copy of a letter written to the Hon. James A. Tawney, upon receipt of a copy of the report on the flood conditions, by Chas. A. Magrath, and James A. Tawney.

OCTOBER 26th, 1916.

HON. JAMES A. TAWNEY,
Winona, Minn.

DEAR MR. TAWNEY: I wish to thank you for the copy of your report of flood conditions in Rainy lake and the Lake of the Woods, enclosed with other copies for Senator Nelson and Dr. F. A. Dunsmoor.

I think the report sets forth the actual conditions which existed on May 24th, 1916, but the water continues to rise until about June 15th and about June 20th there was a slight recession appreciable.

In your report on the water levels you state that on May 28th, 1916, the discharge from the Lake of the Woods at Kenora was 38,000 second feet, while at International Falls on May 30th the discharge was 32,000 second feet, a difference of only 6,000 second feet, a trifle more than one-sixth more than the flow at the outlet of Rainy lake, which is not at all proportionate with the far greater drainage area of the Lake of the Woods.

The lake level of the Lake of the Woods does not directly concern us as property owners on Rainy lake, but indirectly it does as it will have a bearing upon the final determination of the maximum flow to be fixed over the dam at International Falls-Fort Frances, as you are not going to allow the upper lakes to flood out the settlers and other property owners around the Lake of the Woods, and here is where owners of property on Rainy lake became vitally interested. It appears on page five of your report that representations were made to the proper authorities to withdraw the stop logs in the Norman dam controlling the outflow from the Lake of the Woods, and further inquiries made elicited the reply that the stop logs had all been withdrawn, but you found this to be incorrect, as you found a number of the stop logs in place at the time of your visit.

This same condition existed at International Falls at the same time. I was told by Mr. Seymour Backus, that he had telegraphic orders from a deputy minister at Ottawa, Canada, to open all the stop logs in their dam at International Falls-Fort Frances, but he refused to do so, and added that he

did not propose to take any orders from a deputy minister, which would in any way result detrimentally to their own property.

In this connection I wish to state, that whether by accident or design, the log boom lodged against the Canadian Northern Railway bridge at Ranier, just before your visit, had more to do with saving Fort Frances from being entirely inundated than anything else that was done during the high flood. I have no doubt you saw this yourself as it was very apparent that it was this log jam that held the water back in Rainy lake and put all of us more or less under water, and if the Canadian Northern Railway track was under water some distance east of Fort Frances, it was no doubt largely due to the fact that this log jam held it back.

I have carefully studied the report of the annual precipitation for the Rainy lake region, and find that for 13 years it averages 27.04 inches of which 19.90 inches for the months April, September and 7.14 inches for the winter months.

According to your report the precipitation between November 1st, 1915, and May 1st, 1916, was greater by 20% than it had been for 45 years previous, the highest being between 9 and 10 inches during 1879-80, which would make the total precipitation of approximately 12 inches from November 1st, 1915, to May 1st, 1916.

I think this hits the nail directly and squarely on the head. Here is shown the greatest snowfall in 45 years, and still it has not been shown that the owners of the various dams in this entire watershed, and I understand that the same concern, or allied companies, control all of the dams, did one single thing to get ready for the melting of this tremendous volume of snow.

Would it not be reasonable to expect the owners of this great aggregation of power dams and vast amount of property, to at least exercise good common horse sense? I do not think they showed much acumen in not getting ready for it, and even if they desired to save all the water they could for power, they should have, if only to protect their own immediate interests, as your report shows—and it was borne out by actual conditions that there was a back-water which partly flooded out their grinding rooms at the paper mill at International Falls and might have caused an indefinite shut down, and indeed they would have had this shut down, had not Providence, or otherwise, lodged the jam of logs against the Canadian Northern piers at Ranier—provided for a storage basin for the melting snow by drawing off a great amount of water just prior to the spring break up. I think for failure to do this the management of the Minnesota and Ontario Power Co. is solely to blame.

If they had to make good all the losses caused by the high water in the spring and summer of 1916, they perhaps would employ a competent hydrographer in the future to study conditions and regulate the flow of water accordingly. Here was a fall of snow amounting to approximately 4.86 inches above normal and the management took no account of it whatsoever. It is nothing short of a crime to do so, and it is charitable to lay it to ignorance on the part of the Power Company, although selfishness is of course, as nearly always, at the root of this. They wanted all the water, whether from snow or otherwise; they hated to see it wasted.

It is always said when any of us object to favors granted the power company, that if we are injured we can go into the courts for redress. Of course we can; but what of the expense and the time it takes to get justice, and it takes a life time to grow new trees destroyed by those dams, or rather by the refusal to properly regulate those dams.

I want to assure you that any objection raised by the writer to any new privileges asked by the power company is not actuated by any animosity or desire to be contrary, but solely with an object to secure the protection needed as a property owner along the shores of Rainy lake.

It is my personal opinion that the interests of all the people should be safeguarded and if the International Joint Commission has the power to do so, we shall gladly give them all the support we can; but from past experience, not only the high flood of 1916, it was almost as bad in 1914, and relief is too slow if you take it to the courts, for that reason I suggested in my letter to Dr. F. A. Dunsmoor, a gentleman who owns a great deal of property on Rainy lake and has perhaps done more than any one person to make this lake region a great summer resort, that we ask that the Senate of the United States make a special investigation of the conditions up there.

I don't want to be understood as asking that any of the powers or duties of the International Joint Commission be in any way abrogated or interfered with, but it is evident that something must be done soon, and done in such a way that the interest of every person having property which is now either entirely destroyed or annually in jeopardy, be permanently protected. A single individual stands no show to recover much by taking his case into court, as he cannot afford to do it. The lawyers' fees and court cost will eat up all he may recover in the end.

In conclusion will say that I doubt very much that the datum used in Rainy lake for a basis for high water mark, was ever properly established. On our property on Rainy lake, a pine tree which when cut showed 95 annual rings of growth, stood during the high water, seven feet submerged. Pine trees don't grow in water, and I don't believe we should go back 100 years to find a high water mark from which to establish our present bench marks.

Perhaps it would be proper to have such permanent bench mark established by a commission, and to have the two governments employ a competent hydrographer to be stationed at some convenient point within the watershed in question, his duty to be to operate the stop logs in all the dams independently of the power company. I think this arrangement would inure to the benefit of all parties concerned, and it may save the power company hundreds of thousands of dollars, now lost to them and other property owners, purely through ignorance in not operating their stop logs in time, when they saw the water coming; it was piled up high in the woods and on the lakes and it only needed a few warm days to bring it down upon them. If they don't hire a competent hydrographer they should have a guardian appointed for them. In this case of last spring they can not even plead they did not know the gun was loaded, it was too plain that it was coming, but they saw it not, or if they did, they did not care.

I beg your pardon for taking up so much of your valuable time, but we love Rainy lake, it is the grandest place in all out of doors and in my humble opinion the tourist trade of the future will be worth more to the people living up there than anything else; for that reason, our, and the Canadian Government, should not pursue a short-sighted policy in dealing with the problems now under contention.

We felt that when we asked for an inexpensive lock at Kettle falls, that we asked it for the good of coming generations, but it was turned down, apparently from purely mercenary motives.

It was said that the dam to be built was of cheap and inexpensive construction; log, stone-filled cribs, I think are the words used by Col. Potter in his report to the department, but when the dams were built, they were built of

granite and concrete. What more durable material could be used? They will endure until Gabriel blows his horn. Was it intentional or was it a mistake? Did our War Department approve of one set of plans and was another set used in the construction of these dams?

I am mentioning these matters merely as a justification of raising a kick now. We were deceived in the matter of the dams at Kettle falls, and we don't know if our property will be properly safeguarded in the future.

Again thanking you for so thoughtfully including a copy of your report for the writer, I am,

Very truly yours,

C. J. LENANDER.

To the above letter Mr. James A. Tawney replied on October 29th, 1916, as follows:

WINONA, MINN., Oct. 29, 1916.

Mr. C. J. LENANDER,

Bancroft, Iowa.

DEAR SIR: I am in receipt of yours of the 26th inst. which I have read with much interest. I cannot, at this time, answer you fully, but will say that when the International Joint Commission submits its final report to the two governments on the questions submitted to the Commission for investigation under Article IX of the treaty between Great Britain and the United States, dated January 11, 1909, I think you will find many of our recommendations will be in accord with your suggestions, especially as to future control and regulation of the levels of these waters as a whole.

Until our report is thus submitted, you will appreciate the fact that it would be improper for the Commission to make public its proposed conclusions and recommendations.

In regard to the International Falls dam, I wish to say that you were mistaken about this dam being a stop-log dam, as the Kenora dam is, and also that the discharge capacity of the International Falls dam is not only greater than the discharge cross section area in a state of nature, but that there were a great many more thousands second-feet of water discharged last spring through the International Falls dam than could have been discharged at the same level under natural conditions at the outlet of the lake. Had the dam not been there, as our consulting engineers have since demonstrated, the water in Rainy lake and in Rainy river from Ranier to International Falls would have been as high in a state of nature as it was with the dam there. Under natural conditions it is true the lake would have been drawn to a much lower level by the time the flood waters commenced coming in than it was, but the discharge capacity of the level in a state of nature being less than under present conditions, the flood waters would not have been discharged as fast as they were, and the storage basin would have filled up more rapidly and reached an elevation finally as high as it did with present conditions. All this will appear in the supplemental discussion of our engineers in their exhaustive report which they have heretofore made to the Commission as a result of their surveys and data collected and their studies of same.

I do not call your attention to this for the purpose of justifying the failure to anticipate these flood water conditions that have prevailed, especially in consequence of the increased precipitation, but merely to state to you what is a fact, that the level of the lake, notwithstanding the dam, was practically

no higher than it would have been in a state of nature. If the recommendations which the Commission will make to the two governments, with respect to the regulation of these waters hereafter, are adopted, and then carried out, the level of Rainy lake will not rise above the level of last spring, if at all, not more than once in 40 or 50 years.

I do not know if you personally saw the log jam you referred to and its effect on the level of Rainy lake, or not. Mr. Magrath and I did, and from our observations, and also from the gauge readings, I am confident that you exaggerate that effect at least so far as it relates to Fort Frances.

In regard to the Kettle falls dam, I do not know whether you personally saw the plans or not, but if you did and have since seen the dam, you must know that this dam was constructed exactly in accordance with plans and specifications which were approved by the Secretary of War.

You are aware, I suppose, that there are two outlets to Lake Namakan; the international boundary passes through the centre of one, while the other is wholly in Canadian territory. The dam across the international boundary channel is a very short dam and is built as you say of granite and concrete. The dam across the outlet wholly in Canadian territory as I now recall it, is constructed just about as Colonel Potter described it to be, and the high water last spring demonstrated that this dam will have to be constructed hereafter of different and more substantial material to prevent its going out some time in the future.

The International Joint Commission is very glad to have your suggestions as well as the suggestions and objections of other people in both countries, and we desire to assure you as we have all others interested, that our study of this great problem involving vast and varied interests in both countries has been to reach final conclusions and recommendations with respect to the most "advantageous use" of these waters "with the least possible damage to all rights and interests, both public and private."

Yours very truly,

JAMES A. TAWNEY.

The principal reason for incorporating the above letter of Mr. Tawney, is to bring out the viewpoint from which Mr. Tawney looks at the great question at issue.

I desire to call your attention more particularly to the statement in Mr. Tawney's letter as to the dam at International Falls being capable in its present state of discharging more water than in a state of nature of the original falls.

I will not attempt to discuss this feature of the dam; a dam naturally implies an obstruction of some kind, and being an obstruction it must hinder and obstruct something, and that something in this case is the natural flow of the waters discharged from Rainy lake, but in a state of nature the lake was drawn to its lowest minimum every year during the winter months when practically no waters flow into the lake, and the great area of Rainy lake and its tributary lakes was in position to take care of a great amount of water during the spring freshet, thus to prevent the flooding of valuable property.

The assurance in Mr. Tawney's letter that if the recommendations to be made by the Commission are carried out, that the levels of Rainy lake will not rise above the level of last spring (1916) is certainly not very comforting to us land owners who had seven feet or more of water in some of our buildings during the high water of 1916, especially as in practically every instance, all buildings erected on land in the Rainy lake region were built above

high water mark, to judge from all natural indications, such as large growing pine trees, distinct marks on rocks, and the natural appearance of the shore lines where wave action could be plainly discerned.

I do not think it reasonable to attempt to go back a hundred years or more, to discover a high water mark, in order to enable the power company to maintain a higher level in the lake at the present time, if thereby thousands of acres of valuable land and other property is destroyed.

Such a policy would not be in keeping with the sensible conservation policy advocated by the people at the present time, and as the waters in this watershed originate on land owned by the two governments and by its citizens, these waters should not be allowed to bring about the destruction of these people and their property, and rules and regulations should not be made, which when put in the hands of a corporation could use it unscrupulously to enhance their own interests, to the destruction of others.

Considerable testimony was brought out at the hearing in Minneapolis, Minn. on January 22-24, 1917, in the application of the International Lumber Company for approval of obstruction of the waters of the Rainy river at International Falls, Minn., and as some of the testimony given at this hearing has a direct bearing on the levels of Rainy lake, I wish to make mention of it here.

On pages 42 and 43 of printed report of this hearing, with Mr. E. W. Backus on the witness stand, Mr. Edward Anderson, K. C. representing the Dominion Government of Canada:

Mr. Anderson. I want permission to file a blue print of this plan, Mr. Backus. I do not know that I quite understand the situation as to dumping the logs there in the winter time. To what extent do you accumulate logs at the boom in the winter time?

Mr. Backus. We accumulate a very large supply in the winter time.

Mr. Anderson. Where are those put?

Mr. Backus. These are all put on the American shore.

Mr. Anderson. But are they placed within the limits of the boom or on the bank at the edge of the boom?

Mr. Backus. Yes, sir; and then they float out in the river so far as the boom will permit them to go.

Mr. Anderson. But do you keep on putting logs in the river after ice is formed?

Mr. Backus. Yes.

Mr. Anderson. So there is a large accumulation of logs there in the winter time?

Mr. Backus. Yes, sir.

Mr. Anderson. And you say in the spring they go to the bottom?

Mr. Backus. Yes.

Mr. Anderson. How far out does that extend?

Mr. Backus. That extends practically to the outside edge of the boom.

Mr. Anderson. When that condition of affairs exists, then, it does necessarily affect the flow of the water upon the Canadian side?

Mr. Backus. I imagine it must raise the water slightly; I do not know.

Mr. Anderson. It may raise it considerably. You have not taken any observation to notice that?

Mr. Backus. No, sir.

Further testimony on this point will be found on page 100 of same report, Mr. A. Langlois, civil engineer for the Department of Public Works of Canada.

In the testimony of Mr. Langlois it was brought out that the boom of the International Lumber Company, extending from the shore on the American side to the centre of the river, and for a distance of 1,800 feet this boom was filled with logs extending from 5 or 6 feet above the surface and packed solidly to the bottom.

If there were any doubts whatever as to the effect this solid boom of logs would have in holding the waters back in Rainy lake, occupying as it does, one half of the width of the stream, suppose the other half on the Canadian side was filled with logs, what would happen?

On page 58 of same report, after a question put by Commissioner Magrath, Mr. Backus, then on the stand, made the following answer: "In my judgment there is not enough space there from Pithers Point to the dam to do the business; that you will always be obliged to have a congested state of the river, and I think it will be more and more so each year as the industries are enlarged" etc. This is Mr. Backus' own sworn testimony.

In conclusion I desire to present a number of views taken during the high water in the spring of 1916, and although the water continued to rise for nearly a month after these views were taken, and not until June 20th, 1917, was there any noticeable recession and at that time the lake was fully two feet higher than on May 25th when I personally took the views herewith submitted, but a fair conception can be formed as to the damage caused by the high level in the lake before the water receded to its normal stage.

EXHIBIT A

This view taken at the foot of Rainy lake, directly at the Canadian Northern railway bridge at Ranier. This picture taken on May 26th, 1916: At that time there was a log jam lodged against the piers of the bridge and holding back the waters of the lake. It can be distinctly seen in the lower left hand corner of the picture, the drop of the water in the main channel where there was no obstruction.

EXHIBIT B

Lone pine, standing in the centre of the channel known as Brule narrows opposite point in section 29-71-20 (Minnesota side). This pine tree has been a landmark for navigation for many years. This tree was slightly submerged in 1914.

This tree is nearly two feet in diameter at the butt, and when this picture was taken, May 25th, 1916, there was 5 feet of water where the tree was standing and on June 12th there was 6.5 feet of water at the same place, with water still rising.

This tree is standing on a small island of granite schist formation and the tree is approximately 100 years old.

EXHIBIT C

View of buildings owned by Mr. Sam Palmer, located in 33-71-21.

These buildings were built high and dry and among large trees which had not been under water since the country was inhabited. The water rose nearly two feet after this view was taken on May 25th, 1916.

EXHIBIT D

Another view of buildings owned by Mr. Sam Palmer on Sec. 33-71-21 showing his shop building. They had to move out all the machinery and tools through the door by a canoe. This view taken on May 25, 1916, and water rose nearly two feet after that date.

EXHIBIT E

View of ice house owned by C. J. Lenander, located on island in Sec. 13-70-20. On May 24th, 1916, when this view was taken, there was five feet of water in the building, the 70 tons of ice stored winter of 1916 was entirely gone. On June 15th when the water had risen about two feet more, the building was entirely washed away. This ice house was built among a bunch of large pine trees, over one foot in diameter, and at least 40 years old and until the high water of 1916 there was no evidence that the water had reached this spot since the trees started to grow.

EXHIBIT F

This picture was taken November 12th, 1911. It shows a large boulder which also can be seen practically submerged, in right center of Exhibit E. This large boulder, weighing many tons, shows plainly previous high water mark, and in locating the building for an ice house this high water mark was considered as the highest we could find.

On June 17th, 1916, this boulder was exactly one foot submerged.

EXHIBITS G AND H

These pictures are of the same point; the larger taken during normal stage of water, and shows this point to be 15 feet above the water.

The smaller view was taken on May 24th, 1916, and shows this point nearly submerged, with a great many large pine trees standing deep in the water. Location, island in Sec. 13-70-20, known as Emerald Isle.

EXHIBIT I

This picture shows the log, stone filled crib built at Kettle falls which turned out to be a granite and concrete dam, as referred to in a copy of a letter to Mr. J. A. Tawney. This dam was supposed to be of a temporary character and of inexpensive construction, hence an application for a lock to put such boats as traffic on the lakes, through, but the application was denied for above reason.

We offer all of the foregoing evidence to aid in determining where the proper bench marks should be fixed for the maximum high water mark of Rainy lake, and as property owners on this lake we hope a satisfactory solution will be found, and the interests of all be safeguarded.

Very respectfully submitted.

C. J. LENANDER.

STATEMENT OF MR. J. P. OPSAHL

Mr. OPSAHL. Waiting for Mr. Backus' report, I will make one preliminary request that has been on our minds for some twenty years. We own property in 65-11 Lake county at what is called Lower Basswood falls. Approximately in section 11 of that township is what is called Picture Rock on the upper end of Crooked lake and Lower Basswood falls. Section 11, properly speaking, is one of the lakes. We own several miles of waterfront on Crooked lake and on the water above there. While we are not in a position to develop that power and market it, we have been interested in

finding someone who could develop it, and if no one else is here, we would ask the Commission as well as we have asked the War Department in the past on the American side for permission to raise, with a dam at this Picture Rock, the water fifty-three feet, flooding six falls to Basswood lake and creating a water power at the Lower Basswood falls. If there are those that can develop it without serious injury to development on the two sides, we are ready to step out in favor of those who can handle it in a businesslike way. If not, we are prepared as an organization to go ahead and ask your permission as well as that of the War Department on the American side to construct a dam at Picture Rock. That takes up a lot of surface, but there are plenty of banks on both the American and Canadian sides to make a reservoir there and a power dam of approximately fifty-three feet. If it is found that this can be done without detriment or injustice to any power company, we are in a position to go ahead.

Mr. CLARK. Is this locality on the American side entirely?

Mr. OPSAHL. The Canadian side, as I understand, is all owned by the Quetico forest reserve. I have not discovered any private owners on the Canadian side. Our property is on the American side.

Mr. CLARK. The contemplated development which you mention would cover land on both sides of the line?

Mr. OPSAHL. The connections would have to be tied in with a dam at both sides. At the lower falls, properly speaking, there are three falls, the American, the centre and the Canadian side, but they would cover only one way. At section 11 in that township, which is at the head of Crooked lake, a dam can be constructed to cover Basswood falls and so far as injury to any of the adjoining property owners on the American side is concerned, I have failed to discover that anyone would be injured if Basswood lake is raised, while there would be benefit to all the property owners up along these streams if such a raise was made covering that series of six or seven rapids or falls. I make this request to the two Commissions in this way, that it is a formal request for the right to develop that, with the privilege of seeking help from those that are financially able both to develop the power as well as to market the products of such power. We would have to seek the help of others in connection with marketing the products of the power. We are not trying to get in other people's way, but we believe and we have believed for years that that power can be developed to the benefit of Minnesota as well as of Canada. If I am wrong I am perfectly willing to be shown and I will support the best project that is

brought forward. I have fished there and done other things, and I do not think either fishermen or tourists will be injured if that development is carried out.

Mr. McCUMBER. There are a number on this Commission who are wholly unacquainted with the topography of the country you are speaking of, and I think it would be beneficial to us if you would describe a little more in detail these rapids, their heights, the levels of the waters above and below, and the volume of water as nearly as you can so as to give us a general idea of your proposition.

Mr. OPSAHL. What is known as Picture Rock or where you could put in a dam to the height that would cover all the series of falls back to Basswood lake proper is located on the American side, in section 11, township 65, range 11, Lake county. I assume that engineers would have the specific data and as I have come from a woods trip and have not my books with me, I cannot give you the data in regard to the falls. I understand the American state figures give the joint falls between the two lake levels, that is between Basswood lake and Crooked lake, at fifty-three feet. That has not been determined by our own level or aneroid reading.

Mr. McCUMBER. What is the distance between these two lakes?

Mr. OPSAHL. In a straight line it is six or seven miles. If you pack up-stream it is a long way. Downstream it is not so bad.

Mr. McCUMBER. Your idea is to have a dam at the lower falls that will be about fifty-three feet?

Mr. OPSAHL. The federal and state figures give fifty-three feet as the difference in level between Crooked lake and Basswood lake. At this point there are shoulders on both sides that will back up the water over the six lakes. That will then give you boat facilities through the lakes.

Mr. McCUMBER. Would this subserve any other interest than that of power?

Mr. OPSAHL. It is the Dawson route for water transportation on the border.

Mr. McCUMBER. Is that a thing of the past or is there still a need for it?

Mr. OPSAHL. There is no doubt there are possibilities for water transportation because there are along that lake millions of tons of beautiful granite that at present cannot be transported for road or building material on account of lack of water transportation. Where there is a series of lakes and water levels maintained on the lakes as I have suggested, all the minerals and granite could be transported wherever it was needed. We have on our property untold millions of tons of granite. We do not know yet whether we have any min-

erals or not. If this development was carried out this material could be brought out by water or by the railway. Lower Basswood falls are within two and a half miles of a railroad at this present time. If permission was granted by the two federal governments for the development of Lower Basswood falls to whatever height it might be determined, raising the level of Basswood lake, water transportation facilities will be enhanced and power that is now going to waste and that has gone to waste for thousands of years will be brought into use for the benefit of mining, lumbering, and other interests.

Mr. CLARK. How many dams or locks have you thought necessary to overcome that fifty-three feet?

Mr. OPSAHL. Just one.

Mr. CLARK. Then you would make a lock there of fifty-three feet rise and fall?

Mr. OPSAHL. That is one of your regulations. You are the one to prescribe that.

Mr. CLARK. I am trying to get your general idea.

Mr. OPSAHL. Fifty-three feet would raise the water over those—instead of six small dams, one dam of fifty-three feet would raise the water back to Basswood lake and would give water transportation under the old Dawson system. If you were going to provide gateways or fishways for transportation purposes, you would have six sluiceways to go through. In the other case you would have one.

Mr. McCUMBER. As I do not know anything about the flow of water over those falls, how long would it take to fill the waterway to raise a boat fifty feet?

Mr. OPSAHL. We have not gone far enough into that for me to furnish specific data. If our people received permission to go ahead we would comply with the regulations in regard to furnishing that.

Mr. McCUMBER. My question is directed to the feasibility of a lock of that height.

Mr. OPSAHL. I am not looking to establish transportation, but we have always looked upon that route as the Dawson route. It has always been talked of between the two governments, and if any development was carried out there, those things would be considered. As regards which is more feasible, one lock here or six locks, a fifty-three foot head is no doubt more expensive, but I think it would be cheaper in the end if it was going to be a commercial transportation route. If that is not the requirement, the matter is simplified. What we have looked at is the power development, what we can use those lands for if that power is not developed, what the property there is worth unless we have power and transportation.

Transportation from the American side can come from the Iron Range railroad but I am not prepared to say how it can come from the Canadian side. It can be determined later what the Canadian government will propose to do with the power if it is developed there. There is abundant mineral north of those falls.

Mr. McCUMBER. What kind of mineral have you reference to?

Mr. OPSAHL. At the lower end of Crooked lake, across from Crooked lake on the south side of Lac LaCroix there is every indication of another iron belt running through. That would be nearer the Curtain falls than the other. I do not know whether any practical work has been done except that geologists of the steel corporation have been around with us for years but they have always been supposed to be looking for timber—timber cruisers looking for fish and iron and geologists looking for timber.

Mr. McCUMBER. Your opinion is that the overflow from such a dam would be almost negative—very little?

Mr. OPSAHL. Just to the level of Basswood lake, the overflow in that basin would be very little on the American side. On the Canadian side we have not followed it out except to determine the shoulder at the Lower Basswood proper. You would have to build wing dams to hold the water properly if you are going to raise it, but in section 11 there are plenty of shoulders to go both ways. On the American side we always talked of the lower or Horseshoe river basin up to Horseshoe lake, and it would not do us any harm because we can not use the land for any other purposes. We could raise fish there and get Mr. Gould to help us with his fish hatcheries. The fish there are too small at the present time to be caught with a hook and line.

Mr. POWELL. As I understand you, your advocacy of the placing of a dam at that particular point is to develop the power locally.

Mr. OPSAHL. That would develop power at that particular place. That is where our interests are segregated.

Mr. POWELL. And you have no object in developing power outside of that particular point?

Mr. OPSAHL. That particular one is the one we are interested in.

Mr. POWELL. If that is the case how would the placing of a dam there effect the level of either Rainy lake or the Lake of the Woods which must be taken into consideration by this Commission? The effect would be negligible, would it not?

Mr. OPSAHL. No. As a lumberjack, knowing about the troubles in driving logs, I know that in the spring or heavy rainfall we get an overabundance of water when we do not need it and at other times, not enough. A dam of the height that I mention at Lower Basswood falls would create a storage basin and would control that.

Mr. POWELL. What would be the area of that storage basin?

Mr. OPSAHL. That is too big a question to go into without furnishing you with the exact figures to go on. I am satisfied you will get absolutely correct figures of that. Therefore I did not prepare that, but the storage basin would be so immense that it would be a control to flood waters in flood seasons without injury to anyone, and those waters after passing through the gateway of the Basswood falls for commercial use would come for use either to Commercial falls or Kettle falls or Snake falls or International falls following on down to Kenora, with one dam or a series of dams storing the flood water and developing power at the same time. As regards the question of storing water only and not developing power for all the mineral possibilities and timber resources, they believe they have iron on both sides and I contend that the electric energy from those falls should be developed and whatever cannot be used locally can be sent to different places in Canada or the United States.

Sir WILLIAM HEARST. In other words your suggestion is that if a dam were built at Picture Rock it would serve as a regulatory dam for all the waters below that including International falls, and the falls at the outlet of the Lake of the Woods, but you think that as well as its being a regulatory dam power should be developed from it at that point.

Mr. OPSAHL. Yes. The people below and the owners tributary to Basswood falls would be benefited by the use of that power whether it was used in Canada or wired across to the Iron Range or other centres. The other feature, which I look upon as the smallest part of it, is the tourist travel and outdoor life. It is hard to get in and out from our properties on account of the series of rapids. Thanks to the forestry departments of the United States and Canada, we have trails fairly well blazed out and at the rapids or portages, but that would not be as nice as if these little rapids were overcome and boats could go through up to the different places without portaging. It is a great deal easier for a canoe or camping party to camp on the numerous arms of the lake—we will take Vermilion lake; Basswood lake is probably the same; it probably has not as many arms but it covers miles—it is easier to go across Basswood than to go through the little lagoons between Basswood and Crooked lakes. When you come to Crooked lake it is an easy matter to go on to Lac LaCroix. Possibly there would be a development of tourist traffic on both sides and you have the commercial timber, commercial stone and mining possibilities on both sides of the border also.

Mr. McCUMBER. Have you or your association had an estimate made by engineers of the power that could be developed?

Mr. OPSAHL. No. We were going after that this summer. Our organization is Red Lake Northern Railway and Construction Company. Our people who have spent a lifetime in electrical development were going out when this question came up. We would not like to give you figures that were merely guesswork.

Mr. McCUMBER. You have no very close estimate of the number of cubic feet per second that go over those falls?

Mr. OPSAHL. I would not care to give that in contradiction to testimony that will be given you here that will be practically correct.

Mr. POWELL. This lake you are speaking of is immediately connected with lake Namakan?

Mr. OPSAHL. No. It goes from Basswood lake into Crooked lake, from Crooked lake into Lac LaCroix and from Lac LaCroix into Canada into Namakan lake.

Mr. POWELL. It is ultimately through Namakan lake that the water finds its way into Rainy lake?

Mr. OPSAHL. Quite often not so much water passes over Lower Basswood falls as over Kettle falls but several thousand horse power can be developed at Lower Basswood falls.

Mr. CLARK. I understood you to say that the outlet of Lac LaCroix was through the Namakan river?

Mr. OPSAHL. The water from Lac LaCroix goes through Canada—I do not know what the river is properly called—and passes over Snake falls.

Mr. CLARK. It does not follow the boundary line?

Mr. OPSAHL. No.

Mr. MAGRATH. The first question that has been submitted to this Commission is a question bearing upon the advantageous use of the waters of Rainy lake and other boundary waters. It goes on to say: "Under what conditions will it become thus practicable and desirable—(a) to regulate the level of Rainy lake in such a manner as to permit the upper limit of the levels to exceed elevation 1,108.61 sea level datum."

The next sub-question is: "(b) To regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,120.11 sea level datum?"

The Commission when it reported some years ago pointed out that some 25,000,000,000 cubic feet could be obtained on Rainy lake by an addition of say three feet to the level stated above and some 20,000,000,000 cubic feet could be obtained by an addition of eight feet on Namakan lake to the elevation referred to above. We have here to-day many interests represented, commercial clubs, riparian

interests, and it seems to me it might be desirable, in order to get on with this subject, if those interests would be prepared to say in what way they would be damaged if the present levels were increased in order to get additional storage. I have no doubt many of you gentlemen who have announced your presence here to-day come from some distance, and the questions as I interpret them call upon us to determine whether the two countries would be able to get greater benefit from those waters by increasing their storage capacity. It seems to me it would help us very much if those various interests would come forward and say to what extent they are going to be damaged should higher levels be adopted.

Mr. WILSON. Do you mean to raise the water of Rainy lake three feet higher than bench mark 497?

Mr. MAGRATH. The statement as I recollect it in the report of our Commission some years ago was that by raising the level of the water in Rainy lake three feet about 20,000,000,000 cubic feet could be obtained. I am not saying that should be done, but I presume the intention in submitting these questions to us was to have us look into the question whether additional storage on these lakes would give greater benefit to the two countries.

Sir WILLIAM HEARST. I think it should be made clear that so far as this reference is concerned no particular level is suggested. We have to find and determine whether the level should be raised at all, and if so, to what extent.

Mr. ELMQUIST. This seems to be somewhat contrary to the line indicated by the chairman at the beginning of this hearing. He intimated that the power interests who were desirous of changing the levels should be heard first.

Mr. CLARK. I did not mention any power interests.

Mr. ELMQUIST. Those interested in raising or lowering the levels.

Mr. CLARK. Yes.

Mr. ELMQUIST. There are many here who are desirous of leaving the levels as nature leaves them, who do not wish any change of control. There are those who wish to change the water levels. It is going to make for more orderly procedure if those who wish to make changes should present their testimony first.

Mr. POWELL. That ruling of the chairman was not changed. Mr. Magrath was offering general observations on the conduct of the same.

Mr. MAGRATH. We want to make some headway.

Sir WILLIAM HEARST. For the convenience of the people who are here, not to keep them longer than may be necessary.

Mr. McCLEARN. On behalf of the Arrowhead Association of Minnesota that is primarily interested in having these levels left as

they are, I wish to say that we do not want to take the attitude of impeding progress. We are in this position. There are literally thousands of people who are interested in these lakes, people from other parts of the United States and from all these cities and villages in Minnesota whom we represent here. They are primarily interested because they are adjacent to and in some instances adjoining these lakes. They are interested in the riparian rights, in the beaches, in the summer resorts. Some of the counties in the so-called Arrowhead district, northeastern Minnesota, have spent millions of dollars in constructing roads from different cities to these lakes. There are many people here who have established summer homes on these lakes, because of their beaches, because of their timber, because of their canoe routes, because of all the things that are attractive to summer outing. There are many more from other states in the Union and, I doubt not, from different provinces in Canada who come here annually during the summer months and who are interested in these lakes, that the levels be not changed, certainly that they be not changed unnecessarily. Most of us lawyers who are here representing these interests would like to approach the subject as much as possible in a lawyer-like manner. I have before me the rules of procedure of this Commission, and I and my associates have assumed that we would be called upon to present such objections as we had in accordance with those rules, and we shall be prepared to do so. But I believe it would not save time to the Commission, it would not save time for those interested if we were to proceed to present our objections without knowing in advance what it was we were objecting to. We would no doubt be wasting a very great deal of time in presenting testimony.

Mr. POWELL. Is that not all summed up in this, that the onus is on the parties who may seek the change? You may talk for a month and get no further than that. Those who are seeking to make a change should present their case first and support it by evidence. After that you attack their case and strengthen your own contention by evidence.

Mr. McCLEARN. That is exactly our position, but before those who are desirous of making a change present their case, it seems desirable for us not to proceed with our evidence first.

Mr. POWELL. Yes. Everybody knows that in presenting a case it is desirable not to show your hand. Let the other fellow go ahead first. Maybe Mr. Backus is ready now.

STATEMENT OF MR. E. W. BACKUS

Mr. BACKUS. Gentlemen, I have been considerably entertained during the last three or four months by learning through the news-

papers, resolutions of various clubs, etc., what a dire calamity is going to be inflicted upon the people of Minnesota by a project which I have been given the credit of being behind, and I was quite a little surprised this morning, after reading so fully about all these matters, that there was any doubt about what the plans were, although I will confess that some of the things I read were going to be done I had not heard of before. Nevertheless, I supposed that the people who have come here in large numbers would tell us at the outset what they objected to; otherwise, all of this delay and all of these resolutions will practically be for naught. However, that is neither here nor there.

I am perfectly willing to proceed and state to the Commission for the benefit of all, the recommendations of the companies I represent, without any fear that any of these suggestions can be shown to be detrimental to a single interest.

I do want to read you an amusing editorial which appeared in the Duluth Herald, under date of August 13, 1925, headed "Backus or Beauty?"

The Arrowhead country from one end to the other is up in arms against the raid on the wonderland of waterways on the international boundary that is threatened by the Backus lumber, power and paper interests.

And well it may be!

Those who have investigated the situation declare that if the series of dams for developing waterpower proposed by the Backus interests is constructed it will literally lay waste one of the greatest outdoor playgrounds in the world.

It is true that this devastation will develop waterpower that may be highly profitable to the private interests that contemplate the invasion.

But it is also true that the region threatened is so peculiarly desirable for outing purposes, is so precious a national possession just as it stands, that it would be better to forfeit forty waterpower schemes than it would be to let this natural wonderland be ruined by private greed.

The demands of the lumber and power interests for permission to construct these dams are now before the Canadian government.

But international waters, and an international boundary, are involved. This makes the issue a proper subject for the International Joint Commission which was created by the two countries to consider just such questions as this.

The United States is represented on this commission, and it is the duty of every organization, and every citizen, of the Arrowhead country to see to it that a vigorous protest is lodged with the commission against this monstrous proposal, and that it be followed up by a lively campaign to defeat the project.

It is said that the damage done will be mostly on the American side, while the benefits, if any, will be largely confined to the Canadian side. It might be supposed that this would tend to cause the Canadian commissioners to lean toward approval of the project; but The Herald will not believe that until it is demonstrated. The handling of boundary issues, thus far in the history of the relations between the two neighbor countries, has been con-

ducted with great fairness on both sides of the line, and the Canadian authorities have always met the Americans at least half way in arriving at a thoroughly just determination. There is no reason to believe that it will be different in this case.

The scene of the threatened devastation, though it is a national possession, lies in the Arrowhead. It is, therefore, up to the people of the Arrowhead to rise against it and to carry on the fight to stop the proposed vandalism. Judging by the comments that have greeted the news of the proposed raid, that will be done, and it will be done thoroughly and effectively.

I have a basketful of newspaper articles and clippings, etc., that run along in about that way, and the astonishing part of it is that the representatives of those associations should come before you today, after creating all that propoganda, and say that they would like to know what it is all about.

I have been surprised that some one, omitting all those who have assumed that it was going to inflict a terrible calamity on northern Minnesota, should not come here and say, "What is this all about anyway?" But I can say truthfully that up to this moment not a soul has even made an inquiry, the only exception being in Minneapolis on Thursday or Friday last when a gentleman met me on the street and said, "Ed, I understand that your suggestion to the International Joint Commission contemplates ruining Basswood lake. Now, I am interested up there in a small way and I hope I shall be able to attend this conference at International Falls next Monday." I said, "What is your grievance?" "Well," he said, "You are going to raise Basswood lake sixteen feet and that will overflow all the banks and destroy thousands of acres of land and cottages," etc., etc. I said, "I have not the figures with me, but you can rest assured that it is not going to do any damage at all. Any suggestion we make is not going to do any damage." I left him and went to the office and checked back and found that our suggestion was not to raise Basswood lake at all above high water mark. Now there was a very intelligent gentleman who had listened to somebody on the street and had concluded that we were going to raise Basswood lake enough to flood the country for twenty miles both ways. This is the humorous part of it.

I have put the suggestions of myself and associates and our engineering organization in black and white. I have another communication, which is in part a recommendation, addressed to Mr. Wm. H. Smith, Secretary, in answer to most of the Commission's inquiries. Some of the questions we have not answered because we did not have the data, and I have not had time to look into it, and

in some cases we thought this was not the proper time to do it; nothing that means anything, so far as that is concerned, to the public; it would simply apply to the power interests or to the government. The statement which I have prepared, copies of which will be filed with the Commission, is as follows:

SEPTEMBER 28, 1925.

INTERNATIONAL JOINT COMMISSION.

Sitting at International Falls, Minn.

GENTLEMEN: For the past several years our engineers have been engaged in making extensive exploration, investigation and survey of the various lakes and rivers on the watershed tributary to Rainy river on both sides of the international boundary, in gathering statistics relating to the run-off from these waters, and in reviewing and studying the whole subject of providing additional storage on the upper Lake of the Woods watershed, including the cost thereof and the effects which it will produce in controlling the levels of Rainy lake and Lake of the Woods, and the flow therefrom.

The data and information accruing from these investigations have served emphatically to second the conclusions of your Commission in its report of June 12, 1917, as to the desirability of storage reservoirs on the boundary waters in question for the benefit of all interests involved. The same recommendation, as affecting the power resources of the Winnipeg river in Manitoba, had been independently made by J. T. Johnston, B. A. Sc., Chief Hydraulic Engineer, Dominion Water Power Branch, Department of the Interior of the Dominion of Canada, in his report of July 16, 1915, on the Winnipeg river power and storage investigations. These two reports are matters of public record and clearly present the conclusions drawn from the exhaustive investigations conducted.

The necessity for additional storage on the boundary waters for the benefit of all interests, private and public, is so fully recognized that but little reference thereto is demanded. Conditions naturally existing have been substantially improved by the present storage on Rainy lake and the Namakan chain of lakes which has, of necessity been heretofore used as the sole regulating medium for the waters above along the entire boundary. Its inadequacy for this purpose, and the necessity for supplementing it, has been clearly demonstrated, by the fluctuation in levels that has been experienced, and by the wide variation and uncertainty in water supply for public and private purposes that have prevailed.

The existing industrial developments and communities at International Falls and Fort Frances are based largely upon the extent of the waterpower there available. The full possibilities of this power have not been available due to the extreme variations in level and flow above referred to; the industries there have already expanded far beyond the realized power output and further development and expansion will be practically impossible unless these interests secure the proper co-operation in taking advantage of the excellent natural conditions which exist for rendering this power uniformly dependable through proper storage and regulation. This storage is economically attainable, and early action is recommended, first, to secure the benefits as promptly as possible, and second, to develop the storage reservoirs at a lower cost than will be possible if development be too long delayed.

AVAILABLE STORAGE CAPACITY AND ITS COST

Rainy Lake

The volume of storage on Rainy lake, between elevations 493.5 and 497.5 is 39 billion cubic feet. The amount of storage capacity added if the lake is raised to elevation 500.0 will be 24 billion cubic feet. The area overflowed between the old shore line and a new shore line at elevation 501.0 is estimated to be approximately 1,444 acres in Canada and 9,313 acres in the United States, largely swamp and low land of little value.

On September 29, 1922, Mr. A. F. Meyer, formerly one of the consulting engineers of your Commission, prepared at the request of the Canadian engineers an estimate of the cost to compensate for the damage that would be caused by raising Rainy lake from elevation 497.0 to 499.5, with additional flowage rights of 1½ feet. His estimate amounted to \$257,000. In it was included \$78,000 for the protection and improvement of the Canadian National Railway, and the amount allowed by him for the cost of obtaining the flowage rights was extremely liberal. On the other hand, he included the sum of \$20,000 to cover the cost of providing the necessary water front protection at Fort Frances, which we estimate will cost \$42,000.00

Namakan Lake

Up to elevation 508.5 the Namakan chain of lakes has a storage capacity of 30 billion cubic feet. The areas of the additional flowage rights required to raise the level of this basin to 510.0 is estimated to be approximately 1,311 acres in Canada and 4,471 acres in the United States.

The International Joint Commission has recommended that this basin be raised to elevation 515.0 and to do this, an additional expenditure estimated to now exceed \$150,000 to \$300,000 will be required. A large part of this additional amount would be expended for the construction of dykes and other protective works. Flowage rights required are estimated to amount to approximately 2,000 acres on the Canadian side and 6,000 acres on the United States side.

Our recommendation, however, does not contemplate any substantial increase in level on the Namakan chain of lakes other than that which may be created by such slight rise in the ordinary high water mark as might be made at nominal expense for changes to the present dam. Rather than seek any substantial increase in storage on this chain of lakes, we recommend a plan of providing the storage on the waters along the boundary above this chain of lakes. Moreover, the regulative storage thus provided would be susceptible of far more efficient and satisfactory regulation.

In other words, our recommendation with respect to the levels of the Namakan chain of lakes has nothing to do with the present works. It expends no money and purchases no additional storage, but we think that perhaps six inches or a foot may be obtained without doing any additional work or damage. So that the question affecting the Namakan chain of lakes that perhaps interests a good many people in this room if our recommendation is followed is done away with.

Sir WILLIAM HEARST. What is the extreme level you propose for Namakan lake?

Mr. BACKUS. Not over 509.5. It is now 508.5. I am not sure that you can get the extra foot, but I simply say it is a matter for investigation and without building any additional works or purchasing any additional property.

Mr. POWELL. You said something about the waters that are farther up stream.

Mr. BACKUS. I am coming to that. I say, rather than seek any substantial increase in storage on this chain of lakes, we recommend a plan for providing a storage on the waters along the boundary above this chain of lakes. Moreover, the regulative storage thus provided would be susceptible of far more efficient and satisfactory regulation.

Mr. POWELL. But in territory that would drain into this chain of lakes.

Mr. BACKUS. Any territory that flows into the lakes will hold water above.

Mr. POWELL. I understand you now. I just wanted to be clear on that point.

Mr. BACKUS. I continue:

Lac LaCroix

This lake raised to elevation 1,200 (sea level datum) will have a storage capacity of 27 billion cubic feet. The area overflowed in Canada is estimated to be approximately 3,830 acres, and in the United States, 5,300 acres. The cost of this land should not exceed \$35,000. The regulating works at the northern outlet and a crib dam at the western outlet are estimated to cost approximately \$138,710 and \$22,465, respectively, making the total cost of developing this reservoir approximately \$196,175.

Mr. CLARK. Does the water find its way into Namakan lake through Namakan river?

Mr. BACKUS. No. Lac LaCroix has two outlets, the northern outlet through Namakan river and the western outlet through Loon lake and Little Vermilion.

Mr. CLARK. Little Vermilion follows the international boundary?

Mr. BACKUS. Yes, sir. Our suggestion is that you put it all through the international boundary channel and build controlling works at the north end of the lakes so as to take care of the log-driving or anything of that kind that is necessary to be done during the season on Namakan river to the north.

Mr. SCOVIL. Is it not true, Mr. Backus, that it is only at extreme high stages that there is any overflowing at the boundary?

Mr. BACKUS. Yes; some little flow. However, that is a matter for the Commission to take up. But this makes it possible to create a power development with a head of anywhere from 70 to 80 feet, whereas, if it goes down through Namakan the development would not be half as much. You agree on that?

Mr. SCOVIL. We might be taking different sites.

Mr. BACKUS. No; this can all be done at one site.

Mr. McCLEARN. How much would it raise Lac LaCroix, Mr. Backus?

Mr. BACKUS. I will get to that a little later.

Mr. POWELL. What would be the area of the ground upstream that would be drowned out or overflowed?

Mr. BACKUS. I gave you that estimate. You mean at Lac LaCroix?

Mr. POWELL. Yes.

Mr. BACKUS. 3,830 acres in Canada and 5,300 acres in the United States. That is swamp land.

Mr. POWELL. Roughly, about fifteen square miles, is it?

Mr. BACKUS. Yes, just a trifle over 9,000 acres. My statement continues:

Crooked Lake

Raised to elevation 1,260, this lake will have a storage capacity of 7.4 billion cubic feet. The flowage area in Canada is estimated at 1,555 acres, and in the United States, 1,585 acres. The cost of this land should not exceed \$10,000. The cost of the regulating works at the outlet of the lake, chargeable to storage, is estimated to be approximately \$79,750 or a total cost for storage on this lake of approximately \$89,750.

Basswood Lake

At elevation 1,305 this lake will have a capacity of 6.4 billion cubic feet. No flowage rights will be required, as this lake will not be raised above its present high water level. The cost of regulating works, consisting of two dams, is estimated to be \$42,500.

Mr. CLARK. What do you say to the proposition that was submitted by a former speaker of one dam at the foot of the lake?

Mr. BACKUS. This is the first I have heard of Mr. Opsahl's suggestion. The report that we have received from our engineers evidently must have divided that, making different divisions of it. That is the question for investigation all along the line, anyway. I know nothing about the suggestion made by Mr. Opsahl and it may be that if he goes upstream where he says there are shoulders he will find runarounds that will not permit that work to be done. I do not dispute him on what he says; it is all worthy of investigation; but I am simply dealing with the report we get.

Saganaga Lake

At elevation 1,447, this lake will have a storage capacity of 20.4 billion cubic feet. The area to be overflowed is estimated to be 5,920 acres in Canada and 2,350 acres in the United States. The cost of the flowage rights should be less than \$25,000. The estimated cost of the regulating works, consisting of two dams, is \$72,700. The total cost of developing this storage basin will be approximately \$97,700.

SUMMARY

The additional flowage rights on Rainy lake to create the additional storage of 24.0 billion cubic feet are estimated to cost \$297,000.

Mr. MAGRATH. Changing the existing level by how much?

Mr. BACKUS. From 497 to 500. That gives you 2.5 feet additional, which is 24 billion cubic feet.

No additional storage which will create an expenditure is herein recommended on Namakan lake.

The following is a summary of the storage capacities and estimated costs of constructing the storage dams and obtaining the flowage easements on the lakes along the boundary above the Namakan chain of lakes which have been described.

	Capacity B. C. F.	Estimated Costs
Lac LaCroix.....	27.0	\$196,175.
Crooked Lake.....	7.4	89,750.
Basswood Lake.....	6.4	42,500.
Saganaga Lake.....	20.4	97,700.
Totals (excluding Rainy Lake).....	61.2	426,125.

This storage of 61.2 billion cubic feet on the watershed above Namakan lake is equivalent to a sustained flow of approximately 2,270 c. f. s. for a full 310 days of each year. The additional storage proposed for Rainy lake of 24.0 b. c. f. herein recommended, is equivalent to a sustained flow on the same basis of 895 c. f. s., giving a total new storage recommended equivalent to 3,165 c. f. s.

Mr. CLARK. Having provided the capacity, is there any question about the volume of water to fill the capacity?

Mr. BACKUS. Yes. In years like the last three years you would not fill these reservoirs. In 1916 we wasted in three months 180 billion cubic feet.

It is for the purpose of saving water when there is a surplus that all storage naturally is created. There is only so much precipitation and if we have seventeen inches this year and thirty inches next year we have got to be in shape to regulate that situation.

Mr. POWELL. What is your normal precipitation here?

Mr. BACKUS. Without looking at the figures, my recollection is that it is between 25 and 26 inches. Around 1,900, taking the lake

ports, etc., as a gauge, it was estimated to be 32 inches by our engineers, but we have never had but one year as I remember where we had a precipitation of 32 inches. But with this storage provided the total capacity on these upper reservoirs and Rainy lake is 3,165 second feet three hundred and ten days in the year.

The storage suggested on the lakes above Namakan chain of lakes, in conjunction with the existing storage, will provide a sustained, regulated flow of 3,600 c. f. s. at the outlet of Namakan lake.

The present storage on Rainy lake of 39.0 billion cubic feet and the additional 24.0 billion cubic feet herein suggested, are equivalent to approximately 2,350 c. f. s. sustained flow additional, giving a total reservoir capacity along the boundary waters equivalent to 4,620 c. f. s., or over 50% on the mean annual run-off from this basin. Further storage is practicable in this watershed on tributaries not along the boundary, which will unquestionably be developed in the future, and thus bring the run-off under a control that is practically absolute.

Among these are the basins of the following: Vermilion, Maligne, Turtle, Seine, Otukamamoan, Manitou and Footprint.

The advantages of this lake and run-off control, administered in the public interest, are substantial. It is possible to state in somewhat definite terms the gains that would accrue to power users on the entire reach from these suggested dams down Rainy river, Lake of the Woods and Winnipeg river, to Lake Winnipeg. In the definite consideration of the importance of the storage to these interests alone—which in itself more than suffices to justify the undertaking—the benefits, direct and indirect, to all other public and private interests on each side of the boundary are so definite that they should not be lost sight of. We refer specifically to navigation, lumbering, paper and pulp, general manufacturing, summer recreation, fishing, labor, agriculture, railroads, mercantile, and public advancement, health and sanitation, all of which will benefit through sustained lake levels and uniform run-off control.

As to the water power, developed and potential, that would benefit, we submit the following table showing power sites below the proposed storage, which would secure the full advantage of these reservoirs. As these reservoirs above the Namakan chain of lakes would provide for a uniform regulated flow of 3,600 c. f. s. at the outlet of Namakan lake compared with the present monthly minimum of 1,000 to 1,450 c. f. s. all of the power sites below, using the high figure of 1,450 c. f. s. as the present minimum, would benefit to the extent of an increase in dependable minimum flow of 2,150 c. f. s. In addition, there are waterpower sites along the boundary waters above Namakan lake, which are not capable of practicable development without the storage provisions recommended herein. With these storages, there is here a possible potential of about 25,000 horsepower capable of development.

That takes above the Namakan chain of lakes and simply takes in boundary waters. No consideration has been given to the possible power development on either side.

Sir WILLIAM HEARST. And the figure you gave is for possible development above Namakan?

Mr. BACKUS. Above Namakan, yes, sir. Mr. Thomas will tell you a little more about the horsepower. It is somewhere between 25,000 and 30,000. At the motors, at the end of the transmission line, there should be 25,000 horsepower.

All other powers which have been or can be developed without this storage, will be materially increased in primary capacity and value, at a cost for storage which is but a small fraction of the cost of developing equivalent power elsewhere. These powers are:

Con- dition	Site	Mean Head
Dev.	Outlet Rainy lake.....	32
Raw	Rainy river.....	12
Dev.	Outlets Lake of the Woods.....	22
Raw	White Dog rapids.....	55
Dev.	Point du Bois.....	47
Raw	Slave falls.....	26
Raw	Upper Pinnewa (on Pinnewa channel).....	18
Dev.	Lower Pinnewa (on Pinnewa channel).....	39
Raw	Upper Seven Sisters (on main channel).....	29
Raw	Lower Seven Sisters (on main channel).....	37
	Equivalent to head on full flow of.....	62
Raw	McArthur falls.....	18
Dev.	Great (Du Bonnet) falls.....	56
Raw	Pine falls.....	37
	Total mean head.....	367

Some of these are developed and some are not.

The regulated flow from the proposed storage reservoirs above Namakan lake would directly benefit all of these powers to the extent of the increase in dependable minimum flow. It is to the general interest to maintain Lake of the Woods at the most uniform level consistent with conditions, and this interest is not served by the exclusive use of that body and the present storages, as the sole storage for the powers on the Winnipeg river below.

In other words, with the power at the Lake of the Woods they cannot serve the lower Winnipeg river as they could serve it if there were no power plants there. Therefore, the necessity and the recommendation in the interest of the lower Winnipeg to get other powers to supplement these storages.

Further, the complete development of the powers on the Winnipeg river, which is now well within reasonable expectation, will demand the utilization of all available storage to meet the uniform power demands. The proposed storage on the boundary waters above Namakan lake will make available an increase in minimum dependable flow of 2150 c. f. s. for all these powers, at an estimated capital cost of only \$426,125, or only \$19,800 per 100 c. f. s. It will increase the dependable power at these sites by over 71,700 horsepower continuous (80% efficiency) at a capital cost of only \$5.94 per continuous horsepower.

The added storage on Rainy lake will not only increase the mean head at the outlet, but will also increase the minimum dependable flow at all the power sites below by approximately 900 c. f. s. at an estimated capital cost of \$279,000 or only \$3,000 per 100 c. f. s. It will increase the dependable power at these sites by over 30,027 horsepower continuous (80% efficiency) at a capital cost of only \$9.30 per continuous horsepower.

Mr. MAGRATH. When were those estimates made?

Mr. BACKUS. Their preparation began about five years ago and has continued up to the present time.

Mr. MAGRATH. Mr. Meyers' estimate was made some years ago, of course?

Mr. BACKUS. Yes, sir.

Mr. MAGRATH. And you are including his estimate in those figures?

Mr. BACKUS. He made his estimate on the cost of Rainy lake in 1922 just prior to the hearing called by Premier King at Ottawa, at the two meetings there in September and November of 1922.

Mr. SCOVIL. That was the original estimate he made in 1915 and he merely gave a copy of it in 1922..

SIMILAR DEVELOPMENTS

The necessity and desirability of providing adequate storage and regulation of the run-off has been well recognized in other localities, and development along these lines has been undertaken by public and private enterprise. It is interesting to note, in particular, the action taken along these lines in the Province of Quebec, which undoubtedly has been fully considered by your Commission. A brief summary may here be helpful for purposes of ready comparison.

Now I am going into St. Maurice. Of course, you gentlemen are all well aware of the movement that is going on in all the New England states, New York, California and elsewhere to control and regulate the flow of waters which is recognized all over the land to be a desirable thing.

St. Maurice River

A storage dam was built giving a complete control of the headwaters of this stream from a watershed of 3,650 square miles. This has made possible an increase in the minimum flow of the river at Shawinigan from an average of 6,000 cubic feet per second to 16,000 cubic feet per second. The cost of this scheme to the government was \$2,500,000, or \$25,000 per 100 c. f. s.

St. Francois River

This stream drains that section of the province known as the Eastern Townships. Storage dams have been built by the commission at the outlet of two large lakes, viz: St. Francois and Aylmer. The minimum flow of the river has been increased by about 900 c. f. s. The cost of these dams has been about \$750,000 or \$83,333 per 100 c. f. s.

St. Anne (of Beauport) River

This stream is tributary to the St. Lawrence into which it flows about twenty miles below Quebec, on the north shore. Two storage reservoirs have been built to regulate the flow of this stream at a cost of \$350,000. The minimum flow at the Laurentian Company's plant at Seven Falls (head 410 feet) has been increased by 100 c. f. s. at a cost of \$350,000 per 100 c. f. s.

Lake Kenogami. (In the Chicoutimi district)

Lake Kenogami is the source of two rivers where power is generated for the plants of Price Brothers & Company, at Kenogami, and the Chicoutimi Pulp Company, at Chicoutimi. These plants could be operated to full capacity only part of the year. The storage provided by the commission shall assure a minimum flow aggregating 1800 c. f. s. for both streams, with the result that the plants shall be operated to full capacity during the whole year. The cost of this storage (just completed) shall be over \$4,000,000, or over \$222,000 for each 100 c. f. s. of total minimum flow.

All of the above mentioned storage reservoirs are operated by the Quebec Streams Commission, and the benefitting companies pay an annual charge sufficient to cover the interest on the capital cost, sinking fund in thirty years, cost of operation and maintenance, and a small profit.

This policy has proved a great help in the industrial development of the province.

CONCLUSION

It will simplify the matter of general control of this international watershed, if important matters affecting storage, water levels, outflow and regulation thereof, are left to this Commission to deal with as varying circumstances and conditions may warrant. The division, assessment, levy and payment of the cost of all the proposed work should be in the hands of the Commission. In this assessment, we shall expect that the amounts already expended by us shall be taken into account. On this basis we shall willingly pay our share of the proposed work and shall render energetic aid toward the early consummation of the maximum development, carrying with it the greatest benefit to the peoples of these two countries.

In other words, that means that we are perfectly willing to surrender any property rights or anything else if the project is worked as a unit, and put control of all reservoirs in the hands of the Commission.

The benefits to the people of Canada and the United States may briefly be summarized in conclusion. Navigation will be improved and may be revived after having practically passed out of existence for several years. The scenic beauty of the streams and lakes will be enhanced under control and they will become more accessible to tourists and as recreation grounds. The more uniform levels will improve the waters as fish, fowl and game preserves, and for breeding purposes. New wealth in the building up of industries, with all its concurrent and far-reaching possibilities, will be created. The construction of necessary works and power plants is only the first step in bringing into existence that new wealth, which must annually increase as

the beneficial results extend to and are enjoyed by an added population of artisans, merchants, manufacturers, and indeed, those in every walk of life. The increased wealth of each and every community within this area will be many times the proposed expenditures. Annually and for all time the people of both countries will enjoy its benefits, which in dollars and cents it is almost impossible to calculate.

Respectfully submitted,

E. W. BACKUS.

Mr. BACKUS. I desire now to touch briefly upon a few points. I think many people who think they are opposed to the regulation of these waters do not realize that they ought to be on the other side of the fence. As far as the boundary waters above the Namakan chain of lakes are concerned, there is no comparison of the situation today with what will exist if these storage reservoirs are created.

I have been trying for several years to get away from eighteen hours work a day and something over a year ago I started in to negotiate with some people whom Mr. Ralph Thomas represents here to turn over whatever power rights we had on the waters above the Namakan chain of lakes. We progressed pretty well until this propaganda came up. Prior to that time I represented to these people that I did not think there could be any objection to the creation of the storage reservoirs along the lines that the Commission had had under consideration previously and in connection with it the development of whatever water power was there.

Since this propaganda started the Commission sent out its invitation to the earlier conference and then the adjourned conference, and Mr. Thomas' people have indicated the possibility of having cold feet; but I cannot believe that this Commission can fail to realize the wonderful improvements in the situation that such a plan will bring about, with detriment to no one and benefit to everybody.

It is true that one part of the consideration on which Mr. Thomas' people say we should have first call, some of the power, if it were found necessary to use it by transmission line, would be run west from that section, run into International Falls as well as down on the Iron Range. I think it is also possible to develop other powers in that region. I think the sooner that is done the sooner the people of northern Minnesota will realize that we have been sleeping a good many years. An industry might have been promoted if a little energy had been made use of.

When it comes to the Rainy lake section I understand my friend Dr. Dunsmoor who has lived with us all these years is here and thinks he may have something to say about the waters on Rainy lake being too high at 500. Two or three years ago when the water got down so low, I know that we had to pull him out and save his boat and tow it to the dock and get it fixed up several times. Now

he says if he could only have that water down low all the time he could see all the rocks. Now he cannot have it that low, and if he has it at an intermediate point, say 497, then some of the rocks have just barely been covered up. The only way to get out of those rocks is to raise it up to 500 and then he will not have a bit of trouble and he can go anywhere he wants to. Dr. Dunsmoor is a careless driver. He will start out in the middle of the night in a dead line and get a compasspoint and the first thing we know there is an S. O. S. call and we have to go and pull him in and rescue all of his party. I think if these people who are protesting as to Rainy lake get a level at 500 and look at it a while it will look more beautiful than it does now.

If I thought that the raising of Rainy lake to 500, which means 499.5 in the river between the lake and Fort Frances and the mills at Fort Frances, would injure Fort Frances or International Falls or any one else to an amount that cannot be covered by money in improvements, I would not be recommending these reservoirs on the boundary. I hope we can get this permission to create these reservoirs, that we can carry out our deal with the people with whom Mr. Thomas is negotiating to sell that power and let them put it into a system we have got and see the country and northern Minnesota built up.

It seems to me ridiculous that anybody should take the position that there will be any injury. You cannot name an item where it will not be a benefit. Talk about tourists! Why, bless your soul, I have friends who go up on the headwaters around North lake and start down with a canoe and tell me about how many miles they portaged here and the water was all out of the streams and they had to portage their canoe for four or five miles and run down to the rapids and have to do the same thing. With these new reservoirs in they could put their canoes in the headwaters and go on unimpeded until they got to the dam and then go on and have a joy ride, if that is what they like. I would like to do that but I have not the time. So I cannot see anything but benefit, and I do not believe anybody can show this Commission anything else.

I have here the answers to the questions that the Commission sent out. I do not know whether you want me to read those or just hand them to the secretaries. This is quite a lengthy communication and possibly you desire to take a recess at this time.

Mr. POWELL. Before you pass to that, Mr. Backus, there are one or two questions I should like to have some information upon. Of course, we all know the ultimate object of storage is to make the flow uniform and to save as far as possible waste water. I would like to know what has been the result of our fixing the level of the

Lake of the Woods. I will take that first. Taking the present season, has there been any waste water at the lower end of the Lake of the Woods?

Mr. BACKUS. Since you made your report?

Mr. POWELL. No. The last two or three years have been dry years, have they not?

Mr. BACKUS. I will have to give the answer to you offhand. Mr. Scovil can answer it better than I can, but I will say this, that your recommendations are now being carried out on the outlet of the Lake of the Woods in enlarging that outlet and rebuilding the Kenora dam, taking out the rock fill where four, five or six thousand second cubic feet run through it. That is solid concrete now. I think there were somewhere between fifty and sixty thousand yards of excavation work, and while the coffer dam has not yet been removed, the enlargement has been completed and the reconstruction of the dam has been completed, but water will not be passed through there until probably some time in November.

Mr. POWELL. Has the result of the change that has been made been the saving of waste water?

Mr. BACKUS. It will be from now on, because the waste water through that fill kept going 365 days in the year.

Mr. POWELL. You have stopped the waste water from going through?

Mr. BACKUS. With the coffer dam at present. We wasted a small amount of water in the spring of 1924 over the dam besides what was wasted through the rock fill.

Mr. POWELL. What is the flow from your dam down the Rainy river in second cubic feet ordinarily?

Mr. BACKUS. From the International Falls dam?

Mr. POWELL. Yes.

Mr. BACKUS. Estimated all the way from eight to nine thousand cubic second feet.

Mr. POWELL. The minimum is eight?

Mr. BACKUS. No, it gets lower than that, but I think the average yearly with the water above controlled would be between eight and nine thousand cubic second feet.

Mr. POWELL. That is the mean flow?

Mr. BACKUS. Yes, every day in the year.

Mr. POWELL. In what we might call freshet times does much water go over the roll or waste-way over your dam?

Mr. BACKUS. In some years there has been. As I said, in 1916 we wasted 181,000,000,000 feet.

Mr. POWELL. How about the last year or two?

Mr. BACKUS. None. We have had low water for three years. Namakan and the chain of lakes last year and the year before were

away down. These reservoirs would not have been any good last year.

Mr. POWELL. There is one feature of the case that I say is almost worrying me. If in the last year or two there has been no waste water over your dam, to regulate all the flow above, by increasing the reservoir capacity and having your sluiceways above, would be to increase the water going over your dam, to raise the height there, would it not?

Mr. BACKUS. You would have more uniform control of all the waters.

Mr. POWELL. And uniformity at a higher level which would increase your power a great deal?

Mr. BACKUS. That is true.

Mr. POWELL. If it was done through there, what would be the effect at the foot of the Lake of the Woods, would it increase the total flow there if they waste no more?

Mr. BACKUS. With a higher head, yes.

Mr. POWELL. You would give them a higher head?

Mr. BACKUS. Yes. You would have a more uniform flow and if you held the head at a higher uniform level, you would have more flow.

Mr. POWELL. That follows as the night the day. As your company is the chief promoter in the matter, do you contemplate having us decide upon the advisability of raising the head at the foot of the Lake of the Woods?

Mr. BACKUS. No.

Mr. POWELL. Not going to disturb that?

Mr. BACKUS. No.

Mr. McCUMBER. To what extent did the dam which you placed here raise the level of the lake?

Mr. BACKUS. At International Falls and Fort Frances? To what extent will this dam—

Mr. McCUMBER. No. To what extent has this dam raised the level of Rainy lake?

Mr. BACKUS. Well, in a state of nature the water has been above 500 in Rainy lake. It has made it more uniform. The dam has not raised the water in Rainy lake, I mean the maximum height, but it has maintained a more uniform level.

Mr. McCUMBER. What was the mean level before the dam was put there?

Mr. BACKUS. Of course that is a difficult problem. The ordinary high water mark, as defined in law as I understand it, was around 497. The maximum high water mark was a little over 500 on Rainy

lake. What the mean lake level would be or was in a state of nature there are no records to show. It might have been 495 or 494 on an average.

Mr. McCUMBER. But you have maintained the year round a higher level than it would be in a state of nature?

Mr. BACKUS. Yes, a higher average level.

Mr. McCUMBER. Has that been injurious to any part or any interest bordering on the lake that you know of?

Mr. BACKUS. No, I do not think it has.

Mr. McCUMBER. It has not overflowed lands that would not be overflowed by ordinary high water?

Mr. BACKUS. No. That statement is practically true and the land that is affected on Rainy lake is swamp land where there is no certainty of a crop in any case. The timber bordering on the lakes is never worth anything for that kind of timber. In other words, when you find a little scrub poplar on land, we do not estimate it as worth anything. It does not pay; you cannot get your money out of it if you cut it. I do not say that because I want to stir up the State of Minnesota or anything of that kind, but any lands affected by the waters of Rainy lake are not of value enough to consider. Minnesota, under a statute, cannot sell its lands for less than \$5 an acre no matter whether they are swamp lands or what they are. But that does not mean that if you or I went to look at them, we would appraise them at \$5 an acre.

Mr. McCUMBER. Can you give me any idea of the percentage of land bordering on these lakes and rivers that would be affected by the project you have spoken of and would be overflowed, that would be agricultural land?

Mr. BACKUS. That is land capable of being tilled?

Mr. McCUMBER. Yes.

Mr. BACKUS. You might say nothing of what you would call our valuable agricultural land—I do not mean there might not be an acre or so at some point—but when you talk of the total acreage involved, my reports show that the land is of very little value.

Mr. McCUMBER. It is either swamp or stoney land?

Mr. BACKUS. Yes.

Mr. POWELL. Have you read our report on the Lake of the Woods?

Mr. BACKUS. Yes.

Mr. POWELL. The question was gone into very thoroughly. Mr. Meyer and Mr. White were the gentlemen who had the matter in charge and I think while the great bulk of it was regarded as practically worthless, a considerable value was placed on quite a fractional portion of the land.

Mr. BACKUS. Yes. They placed a value on it and that was a good way of estimating the cost. My prediction is, on Rainy lake and the Lake of the Woods and elsewhere, when you put on men who know their business to appraise values, you will find that the engineers have been very liberal in making their estimate, so as to be on the safe side.

Sir WILLIAM HEARST. As regards the plan you have outlined for the development you propose, diverting the Namakan river that flows through Canadian territory into the international channel, if that is not found possible or practicable, to what extent would your scheme be affected?

Mr. BACKUS. It would not be affected as regards storage. It would affect only the power development—part of it. In that connection, of course, we want all the help we can get. I presume the two governments will pay part of this bill and the power interests, part. We would like to have all the help we can get in defraying the expenses from the two governments, and in addition to paying their part of the storage the power interests would have to bear all the power development costs. Naturally, I think it is in the interests of both countries on the boundary to see as much power developed as possible, because wherever you get 10,000 horse power developed, it is not developed to lie idle, it always creates an industry, it builds up population and it adds to the wealth and adds to the taxes.

Sir WILLIAM HEARST. I forget for the moment what amount of power could be developed at that point. I think Mr. Thomas and the engineers have figured up between 25,000 and 30,000 horse power on the boundary. If Mr. Opsahl is right and there is another power site there, that adds to the amount. I never heard of that until this morning when he made the statement. I was going to suggest that if you start to read this letter of nine pages, it may take quite a while, and if it is agreeable I would suggest that it be handed in or be read immediately after we resume this afternoon.

Mr. MAGRATH. Did you say you gave the substance of it in a letter you have already read?

Mr. BACKUS. A small part of it where Mr. Smith asked a question and it is already answered here. It will take me over half an hour to give it to you in any case and then it will be here before the people.

Mr. MAGRATH. How long will it take you to read it?

Mr. BACKUS. Probably it will consume an hour, including your questions.

(At 12.45 p. m. the Commission took recess until 2 p. m.)

AFTER RECESS

Mr. CLARK. Mr. Backus, will you be kind enough to proceed?

Mr. BACKUS. This is in answer to the questionnaire by the secretary, Mr. Smith:

INTERNATIONAL FALLS, MINN.,
September 27, 1925.

Mr. WILLIAM H. SMITH,
Secretary International Joint Commission, Washington, D. C.

DEAR SIR: AS requested in your questionnaire of May 19, 1925, we are pleased to submit herein information under the various headings as listed.

1. A general statement as to the manner in which our interests would be affected by an increase of maximum level on Rainy lake, Namakan lake and the boundary waters above, must be considered in conjunction with the storage on the watershed as a whole, as whatever storage and regulation are accomplished on the upper waters will materially benefit conditions on Rainy and Namakan lakes, which have, of necessity, been heretofore used as the sole regulating media for the entire boundary waters. Their inadequacy for this purpose has been amply demonstrated, by the fluctuation in levels that has been experienced, and by the wide variation and uncertainty in water supply for public and private purposes that have prevailed.

(a) On Rainy lake, for each foot increase in elevation above 1,108.61 (497 D. P. W.) a storage of about 9.6 B. C. F. is obtained, and an increase from 1,108.61 to 1,112.61 gives a storage of 38.4 B. C. F. equivalent to a constant 1,430 c. f. s. for a 310-day year.

As to the effect of the proposed elevation, we refer the Commission to its own final report, page 36, wherein it is estimated that if all the proposed storage is utilized primarily for equalizing the outflow from the Lake of the Woods, it will increase the power available at International Falls and Fort Frances by only about 700 horse power. Whereas, if it is utilized primarily for increasing the available water power on the Rainy river, including the Long Sault rapids development, there will be an increase of about 2,500 horse power.

(b) The present structures at the outlets of Namakan lake limit the elevation to 1,120.11 (508.5 D. P. W.). The dams themselves are constructed to a height of 1,121.76 (510.15) but are not equipped to hold water above the elevation first stated. We believe that the cost of the necessary alterations to the dams permitting materially higher elevation and the acquisition of the property necessary for flowage rights would not be justified by the benefits derived. However, it may be possible to secure an increase in level and storage of 6 inches to 12 inches, at nominal expense and without damage.

I understand that the Commission have in mind the fact that on both Rainy lake and Namakan lake at the present levels of 497 on Rainy lake and 508.5 on Namakan lake there are still unadjusted claims that we have all been hoping the International Joint Commission would work out machinery to adjust out of court the same as they are working out the machinery to determine the actual amount due to claimants on the Lake of the Woods. The treaty

provides for all of that on the Lake of the Woods, but it does not provide for it on Rainy lake or Namakan lake up to the present time. Our suggestion to get this increased storage of 24,000,000,000 cubic feet on Rainy lake and an increase in level and storage of possibly 6 inches to one foot on the Namakan chain of lakes, we contend would not add greatly to the adjustment that already must be made, I mean must be made for the present levels. I just want to call attention to that. In other words, if six or twelve inches can be secured on Namakan lake without any increase in the structures there and without much if any increase in the adjustment and flowage, and the same thing be true on Rainy lake, then the cost for additional storage over what it is to-day is practically nothing. The letter continues:

(c) The holding of the lake levels on the boundary waters above Namakan lake at high water mark, or five feet above such elevation, in all cases will not accomplish sufficient storage to be of value in the regulation desired. Specific figures giving suggested elevations are covered under question four.

2. Works or measures necessary for each of the above:

(a) In order to permit Rainy lake being raised to the elevation noted in 1 (a), flash boards could be provided on the International Falls-Fort Frances dam, and some extensions made to the spillway gates.

That would be the only expense necessary there, simply to put three feet of flash boards on the dam already constructed and make some little change in the wasteways which would not amount to very much.

(b) In view of the fact that we recommend no changes in the high water level on Namakan lake, no improvements or other measures are suggested, except a slight possible addition to the gates.

(c) On the boundary waters above Namakan lake, the following works and measures are suggested:

Crooked lake-----	1 storage dam.
Lac LaCroix-----	2 storage dams.
Basswood lake-----	2 storage dams.
Saganaga lake-----	2 storage dams.

No plans have been prepared of these structures, but sufficient field investigations have been made to convince us of the practicability and great desirability of this recommendation.

3. The estimated cost of these works is as follows:

(a) On Rainy lake, the present structures can be extended at nominal cost.

(b) On Namakan lake, our recommendations contemplate no change in the present works, which would entail more than nominal expense.

(c) On the boundary waters above the Namakan chain of lakes our estimates are as follows:

Lac LaCroix, 2 storage dams and flowage easements-----	\$196, 175
Crooked lake, 1 storage dam and flowage easements-----	89, 750
Basswood lake, 2 storage dams (no flowage easements required)----	42, 500
Saganaga lake, 2 storage dams and flowage easements-----	97, 700

4. To secure the most advantageous use of the boundary waters affected by this reference, we suggest that the low water stages be fixed by the Commission in all instances and the limiting elevations of upper storage ranges be as follows.

Mr. Smith's inquiry asks for the sea level datum. We give it both ways.

Lake	High water
Rainy lake-----	1,111.61 (500).
Namakan lake-----	1,120.11 to 1,121.11 (508.5).
Lac LaCroix-----	1,200.
Crooked lake-----	1,260.
Basswood lake-----	1,305.
Saganaga lake-----	1,447.

These high water marks were taken by our engineers determined by the marks on the rocks, and the stage of the water at the time they happened to be there, so that they might differ in different seasons. There might be a slight variation. •

5. The storage on those lakes should be regulated collectively, and by the Commission.

6. The above storage reservoirs should, we suggest, be administered collectively under the jurisdiction of the International Joint Commission.

7 and 8. We consider that practically all interests, public and private, on each side of the boundary will be benefited by all of the above, including most specifically, navigation, power, lumber, paper and pulp, fishing, general manufacturing, summer recreation, agriculture, labor, railroad, property, mercantile, and municipal and public.

1. Navigation would be improved in safety, extent and utility.

2. Power would be increased in quantity and become continuously dependable at lower operating cost per unit, not only at the outlet of Rainy lake, but at all potential and developed power sites below.

3. Lumber and logging would be better served by uniform lake elevations for dependable driving and towing, and for operating.

4. Paper and pulp manufacture would be materially benefited through the increase and dependability of hydraulic and hydro-electric power, by the increased availability of process and boiler water, and by the increased possibilities of water transportation of pulpwood.

5. Fishing should be substantially benefited by controlled levels and larger areas of dependable pure water, giving better breeding and growth conditions, and more ready accessibility to the boundary waters.

6. General manufacturing would receive new impetus and increased scope through greater and more dependable primary power, better manufacturing conditions, and improved local stability.

7. Recreation and outing facilities would benefit by less fluctuation in lake and river levels, by improved canoeing and boating conditions, larger and more uniform water areas, and by greater ease of access to the upper boundary waters. Such fluctuations as would occur on these lakes would be extended over a period of several years rather than recurring violently from season to season as is now the case.

8. Labor employment throughout would be materially stimulated, additional workers attracted, and more stable employment conditions prevail.

9. General property values would be greatly stabilized and increased, through added industrial activity, development and population.

10. *Local agricultural interests* should profit through increased local markets for agricultural products, greater accessibility, increased realty values, and assurance of progressive development in the surrounding community.

11. Railroads would enjoy increased tonnage of inbound and outbound freight, more stable volume of local industry and commerce, as well as greater passenger traffic.

12. *Local mercantile enterprises* could well expect an increased and more uniform volume of business from the greater number of wage earners steadily employed at good wages, and from an increasing number of tourists, vacationists and transients.

13. General municipal and public interests will benefit most of all, through increased electric power for public, domestic and manufacturing purposes; through larger and purer sources of water supply; through increased accessibility of the upper boundary waters, greatly extending the sphere of local business and activity; through increased population, property values and taxable wealth, making possible more and more the advantages, comforts and attractions of modern civilization; and through higher municipal credit and a sounder basis for stability and prosperity.

The existing industrial, mercantile, railroad and civic developments at International Falls and Fort Frances are largely the result of three factors: First, the existing water power; second, the supply and availability of raw material; and third, the capital and enterprise through which these natural resources have been converted to public and private advantage. The raw material is still available, together with the capital, development, organized enterprise, and population for permanent progress and expansion, but the uncertainty and inadequacy of water power have already made themselves keenly evident, and will arrest further progress on both sides of the boundary unless early remedial action be taken.

9. We consider the capital and manual costs of this additional storage and regulation should be apportioned among the various interests benefited; a part to the power interests obtaining the advantage of the storage and regulation, and a part to the two governments to cover navigation and other interests by which the public in general is benefited; the administration, allocation, levy and assessment of these costs to be made by the International Joint Commission.

10. Our proportionate share of the costs should be allocated by the Commission on the basis of the relative benefits to us as a power user.

11. We do believe that local power developments at some of the sites of the storage dams would be consistent with the use of these dams for storage and regulation. The dams themselves would be considered as primarily only for storage and regulation, and any interests developing power at each site should not only defray the full cost of their power developments, but should also pay their proportional share of the costs of the additional storage and regulation benefiting such power developments.

RAINY LAKE

A. The upper and lower levels of the present storage range are respectively, 497 which is the ordinary high water level in the state of nature, and 490 which is approximately the ordinary low water mark in the state of nature (1,108.61—1,101.61). There is federal legislation and approval of the War Department authorizing the present structure on the United States side and a Crown grant and permit authorizing the structure on the Canadian side.

D. The interests receiving direct benefit from the present storage are the power interests at International Falls and Fort Frances, at the outlets of Lake of the Woods, and on the Winnipeg river below. Also, the navigation on Rainy lake, Rainy river, Lake of the Woods and Winnipeg river, the communities and country adjacent to these waters on both sides of the boundary, and the transportation agencies serving them.

E. The benefits to the power interests are those which inevitably accrue from the availability and utilization of the regulated storage made possible by this development. To date, these have not been realized to the full extent by the enterprises at the outlet of Rainy lake, due to the fact that the level of Rainy lake has perforce established the usable head for this power, and the fluctuations in level caused by regulation have widely varied the power output of their installations. The full storage capacity has been available to power users on the lower waters. The benefits to navigation, to the communities and adjacent territory and to the railroads, have also been substantial, but are difficult to reduce to a tangible estimate or apportionment.

F. We suggest that the power interests should bear one-half and the two governments one-half to be in turn divided equitably between them.

G. On the same basis as capital cost.

NAMAKAN LAKE

A. The upper and lower levels of the present storage ranges are normally 508.5 and 497.5, respectively (1,120.11—1,109.11). During years of drought the lower elevation has been below normal, our records showing an extreme low of 494.57. The present structures were authorized by the War Department on the American side and by the Crown on the Canadian side.

C. The cost of operating and maintenance has been comparatively small but having been entered in our general operating cost, we have not had opportunity to segregate it.

If the Commission feels that is necessary, we can set some of the boys at work and go over all this work and segregate it.

D. The interests benefited from the present storage are identical with those under the corresponding paragraph dealing with Rainy lake.

E. The benefits from the present storage are practically identical with those listed under the corresponding paragraph dealing with Rainy lake. The power at the outlet of Rainy lake receives benefit of this storage as fully as do the powers on the waters below.

F. On the same basis as Rainy river.

G. On the same basis as Rainy lake.

E. W. BACKUS.

I think the questions are all answered except one or two or three as regards which, I stated at the outset, part we cannot give the information, and part I do not think this is the proper time to give figures. It is a matter that will require auditing and I do not think it is absolutely necessary at this hearing. There is no further comment that I think of excepting to emphasize the fact that in making this statement we have tried not to make any recommendations which would be otherwise than beneficial to the general public as well as to private interests.

Mr. McCUMBER. Did you explain upon what theory you have assessed the two governments with one-half—ability to pay?

Mr. BACKUS. No, sir.

Mr. McCUMBER. What is the theory?

Mr. BACKUS. I figure in this way. In the first place navigation is greatly improved all the way from the head waters to Lake Winnipeg. Of course below Minaki on the Winnipeg river there is no commercial navigation to speak of at the present time, but in the future there will be I am sure. I feel this way, that in turning over the regulation of these works to the government, with the improvement in navigation, the benefits as received by the government generally by taxes from every enterprise that is created and on the boundary waters especially where one government, the Canadian Government, is finding it necessary to stand a certain amount of the expense, I think both governments ought to join in helping to pay for the benefits which they receive. I might refer you to a little work that is going on at the present time right at the Twin Cities. The suggestion is now made to the War Department that a dam should be constructed at the confluence of the St. Croix and the Mississippi rivers at Preston, an improvement that will cost \$4,000,000. Now, in all probability 10,000 horse power can be developed when that improvement is put in, but the improvement is suggested in order to benefit navigation. I submit that navigation at the present time on the upper Mississippi is looked after more diligently and more money is spent on it a hundred times over than this would amount to in the northern part of the state. There is no reason why those waters cannot be made and kept navigable. That is the answer to your query, Senator McCumber.

Mr. McCUMBER. I was wondering just what connection you would have with the navigation. Is it the idea to connect it up with the Great Lakes in any way?

Mr. BACKUS. That was the old idea, but I have not thought of it or followed it up.

Mr. CLARK. Just what navigation would you have there? What would be the sources of the loads that would be carried?

Mr. BACKUS. Prior to 1902, this point was reached almost entirely by going from the twin cities around to Winnipeg, east to Kenora and then by boat to Fort Frances. Of late years the water has not been dependable enough so that those navigation companies could exist. There has been high water and low water with such changes as put them out of business. All the business in this vicinity was originally water transportation.

Mr. CLARK. With the railway, would you have any considerable amount of commerce that could be water borne?

Mr. BACKUS. Personally, and I should say candidly, I think it would be more the small craft for pleasure outings and so forth than for traffic in freight. At the same time if there were any boats operating between Kenora and Fort Frances to-day we would be transporting a great deal of paper mill products by boat.

Sir WILLIAM HEARST. If the improvements you suggest were made, what would be the dependable draught between Fort Frances and Kenora?

Mr. BACKUS. I have not figured it.

Mr. McCUMBER. The real benefit, the thing you are trying to get is the development of power, is it not?

Mr. BACKUS. Well, storage and power.

Mr. McCUMBER. Storage is simply incidental to the power?

Mr. BACKUS. Yes, in other words that is what we are more interested in than the navigation, although we would like to see some navigation between here and Kenora.

Mr. McCUMBER. I can understand why the government should bear the expense at its ocean ports because they are necessary for governmental defense. It must have a place for its war ships, for all characters of its defensive operations; but when it comes to a purely inland proposition in which the individual operating any industry has the entire benefit, I am a little bit at a loss to understand upon what theory the government should be called in to make the development.

Mr. BACKUS. That is where we are rather handicapped on the outside. If we cannot persuade you to share this expense, we are out of luck.

Mr. ELMQUIST. Do you intend to supplement your statement with testimony from the engineers that have made this study?

Mr. BACKUS. Not unless the Commission request it, and in that connection I think it has always been the custom for the government not to accept any engineering data except its own. We would not undertake to furnish the Commission with any engineering data unless they request it.

Mr. ELMQUIST. This study has been completed by your engineers?

Mr. BACKUS. Not completed, no. In order to complete it it would be necessary to run out all the contours, to make absolute surveys of all the flowage areas.

Mr. ELMQUIST. How long would that take?

Mr. BACKUS. That depends upon how large a crew you put on. It could be done in one season or partly done in the winter and partly in the summer.

Mr. ELMQUIST. Would that cover the lakes on the boundary as well as lakes tributary to the boundary lakes?

Mr. BACKUS. The Commission as I understand the matter, do not take cognizance of anything except the boundary waters, so that it would cover only that in any case.

Mr. ELMQUIST. What waste water in any one year was carried over International falls.?

Mr. BACKUS. Three years ago—I think in 1922; I will have to check that up—but as I stated here this forenoon, the operation of these reservoir dams, excepting to have a more uniform flow of water, would not have been to waste the water because there has been a low flow of water during that time. If these storage dams had been in existence at that time, there would not have been any such low water period.

Mr. ELMQUIST. When was the period next before that when you wasted water?

Mr. BACKUS. Before that I think we wasted a little water practically every year following the 1916 flood.

Mr. ELMQUIST. Is it your definite recommendation that the level on Rainy lake be 500?

Mr. BACKUS. That we be authorized to hold the lake at 500. Of course the practical working out of that would not be that the lake would be at the 500 level very much of the time. If you work it up to the 500 level in the spring run-off, it might be held there for three months, possibly, during a year. If that level were authorized, I should say from a practical operating standpoint, it is very doubtful if it would be as high as that more than three months and then only in years when there was surplus water.

Mr. ELMQUIST. What is the present level of Rainy lake?

Mr. BACKUS. 496.3, I think.

Mr. ELMQUIST. How have you managed to maintain the level of 496.3 or 497 during this dry year?

Mr. BACKUS. By only passing a much smaller quantity of water through the dam.

Mr. ELMQUIST. Have you also drawn off water from Namakan lake to keep up the level of Rainy lake?

Mr. BACKUS. No; as I understand it. I have been here only once or twice this year. I have been very busy outside. My understanding is that the dams have been open a good deal of the time to accommodate the sluicing of your people's logs or the logs of the Border Lumber Company, and the opening has been for that purpose practically almost entirely. I perhaps cannot answer some of these questions definitely. If you have any extended inquiry you want to make on that, I will post myself up on it, what the levels have been from week to week during the year on both Rainy lake and Namakan lake.

Mr. ELMQUIST. There will be occasion for that a little later on. As regards the Namakan lake project, do you propose to raise it from six inches to twelve inches from the present level?

Mr. BACKUS. I do not know the present level, but from the level formerly established by the Commission, 408.5, if that can be done without damage. I am told there is a possibility of raising it from six inches to a foot without doing any more damage than is being done at the present time.

Mr. ELMQUIST. Is 508.5 high water mark for that lake?

Mr. BACKUS. I could not answer you—oh no, it is not the high water mark. In 1916 it was away above that. If I remember aright, it was between 511 and 512.

Mr. ELMQUIST. You have not mentioned Vermilion lake. Is Vermilion lake on the same level as Namakan lake?

Mr. BACKUS. No.

Mr. ELMQUIST. Little Vermilion?

Mr. BACKUS. No, it is not. That does not come into the change.

Mr. ELMQUIST. Is there contemplated a supply of storage and power at Little Vermilion?

Mr. BACKUS. I do not know about that. I think when Mr. Thomas is making his statement you had better find out from him.

Mr. ELMQUIST. Who is Mr. Thomas?

Mr. BACKUS. An engineer.

Mr. ELMQUIST. Whom does he represent?

Mr. BACKUS. Some power interests. I could not tell you all of them. I could tell you some of them but I am not at liberty to give their names.

Mr. ELMQUIST. You have been negotiating with him about the sale of power up there but you do not care to disclose the names explicitly.

Mr. BACKUS. I do not.

Mr. ELMQUIST. There has been a good deal of talk about the development of power on Little Vermilion. I suppose you have seen that in the newspapers.

Mr. BACKUS. No, I have not seen very much of that.

Mr. ELMQUIST. But so far as you and your interests are concerned you do not intend to create any storage on Little Vermilion?

Mr. BACKUS. I am not sure about that even. I do not think anybody can answer a question like that until all the surveys, contours, and so forth are worked out.

Mr. ELMQUIST. I assume that you know something about the general plan up here and that is a part of it.

Mr. BACKUS. I know they have been investigating the whole stretch of country from Namakan lake to the inlet of Lac La Croix,

more or less. They have spent a good deal of time and a number of men have been working on that. Our company in that connection, before I negotiated with Mr. Thomas' people, did a lot of work and are still doing work because we want to see what the storage will be. Our interest is more in storage than in the power development, of course.

Mr. ELMQUIST. If you were to have the water level raised on Namakan lake six inches or a foot more, what would be the minimum level which you desire to establish?

Mr. BACKUS. We have taken this position on all of these reservoirs that we are willing to let the International Joint Commission establish the levels. We have not made any recommendation as to that.

Mr. ELMQUIST. Will you be prepared to make recommendations later on in this hearing?

Mr. BACKUS. I do not think so. When they get the surveys made, before the matter is finally determined we may wish to make recommendations. We are not prepared to do so now.

Mr. ELMQUIST. You desire to have the Commission control all the water from those lakes?

Mr. BACKUS. Yes, including the storage reservoirs now existing.

Mr. ELMQUIST. Should you increase the water level on Namakan lake a foot, would that injure any present timber holdings?

Mr. BACKUS. Well, that is the reason I said I had been advised there is a possible opportunity of increasing it. I do not say that that is the case. My letter states from 508.5 to 509.5.

Mr. ELMQUIST. I do not think you have directly answered my question. I asked, would it injure present holdings on the lake?

Mr. BACKUS. I do not understand your question yet.

Mr. ELMQUIST. My question was, should you increase the water level of Namakan lake a foot, would that injure any present timber holdings?

Mr. BACKUS. I cannot answer that.

Mr. ELMQUIST. What is the present water level on Lac LaCroix?

Mr. BACKUS. I cannot answer that.

Mr. ELMQUIST. Do you want to increase that to the high water mark?

Mr. BACKUS. Above the high water mark.

Mr. ELMQUIST. How much above the high water mark?

Mr. BACKUS. You were evidently not listening very attentively when I was reading that.

Mr. ELMQUIST. You are a pretty fast reader and I could not put my finger on the mark on Lac LaCroix. The high water mark is

1,183.4 and your suggestion is to raise it to 1,200 That is 16½ feet Do you know how far you are below high water mark now?

Mr. BACKUS. No, I do not.

Mr. ELMQUIST. Is it substantially less than the high water mark?

Mr. BACKUS. I do not know. I could not say what it is at the present time. If that is material to you I will see if we have anyone who has checked it lately.

Mr. ELMQUIST. I think the records would show what the present water level was.

Mr. BACKUS. I cannot say unless somebody had taken the levels there recently.

Mr. SCOVIL. I have a gauge there. The level on Lac LaCroix on September 21, was 1182.7.

Mr. BACKUS. When this was taken it was 1,183.4.

Mr. ELMQUIST. What effect would an increase of sixteen feet have upon the shore line of Lac LaCroix, on the timber holdings.

Mr. BACKUS. I could not answer that.

Mr. ELMQUIST. Have you investigated that question at all?

Mr. BACKUS. No. The estimate we have given you for the acreage is a rough estimate, and you could not determine any of those questions without running up contours, making complete surveys.

Mr. ELMQUIST. Supposing it should become necessary in the future to draw logs out of Lac LaCroix down to International Falls, what would be the method of procedure under your plan?

Mr. BACKUS. Of driving logs?

Mr. ELMQUIST. Yes.

Mr. BACKUS. The same as you have now, only it would be very much improved.

Mr. ELMQUIST. Would it come through Namakan river or through the sluiceway?

Mr. BACKUS. I think the practical way would be to drive from Namakan river.

Mr. ELMQUIST. Then the right as well as the ability of a lumberman to sluice his logs through the dam would be entirely subject to your control of the lake?

Mr. BACKUS. No.

Mr. ELMQUIST. Who would regulate that?

Mr. BACKUS. I presume the government would require the right to furnish for the transportation of logs whatever water was necessary to drive those logs down the Namakan river.

Mr. ELMQUIST. Do you know whether the increasing of the water level sixteen feet on that lake would cover practically all of the islands now existing there?

Mr. BACKUS. Well, as I say, those contours have not been run, but any island that it covered, that it might cover, would not be any loss.

Mr. ELMQUIST. What is your plan for Knife lake?

Mr. BACKUS. I would have to get the map now to answer that. I think that is on the same level as Saganaga lake, like the Namakan chain of lakes.

Mr. ELMQUIST. Would you put the dam at the foot of Knife lake or up in the Saganaga lake?

Mr. BACKUS. My impression is that it would be at the outlet of Knife lake.

Mr. ELMQUIST. How much would you raise that level?

Mr. BACKUS. To 1,447. The normal elevation at the time we took it was 1,432. That would be fifteen feet.

Mr. ELMQUIST. Would that influence the water levels on a large number of tributary lakes, some being upon the boundary and some outside of the boundary line?

Mr. BACKUS. It would influence whatever was on that chain of lakes, lakes on the same level.

Mr. ELMQUIST. Do you know what lakes are on that level?

Mr. BACKUS. No, I could not tell you.

Mr. ELMQUIST. How many islands are in Saganaga lake?

Mr. BACKUS. I could not answer that question.

Mr. ELMQUIST. Is there a large number there?

Mr. BACKUS. I think so. There are a good many islands on most of those lakes.

Mr. ELMQUIST. Would the proposed water level submerge practically all of those islands?

Mr. BACKUS. I could not answer that question.

Mr. POWELL. What use are those islands put to at the present time?

Mr. BACKUS. Very little use. There may be a few campers there.

Mr. POWELL. Do they grow any grass, marsh grass or any other grass or are they rock?

Mr. BACKUS. I think most of those islands are timbered with light timber just like the islands of Rainy and Namakan lakes.

Sir WILLIAM HEARST. Is the timber on that of value, Mr. Backus? Is it commercial timber?

Mr. BACKUS. It is of comparatively small value. On the larger lakes it is of very little value. Mr. Elmquist was talking about pine timber on Lac LaCroix. Of course, that is going to be cut off shortly anyway, and it would be necessary to save all timber of any value that is going to be affected.

Mr. ELMQUIST. If you increase this water level fifteen feet is it probable that in some years you would draw off the whole of that fifteen feet down to a minimum level?

Mr. BACKUS. I have already told you, Mr. Elmquist, that the minimum we have left to the International Joint Commission to fix.

Mr. ELMQUIST. That is true, but assuming that there were a maximum and a minimum there, a difference of fifteen feet between the high and low marks established by the Commission, would it then be established within the course of power operations that you would draw off all of that water in one year from any one lake?

Mr. BACKUS. Well, it might.

Mr. ELMQUIST. That is one of the possibilities?

Mr. BACKUS. Yes, sir. It might be planned so that in the first part of March we could figure how much water we had left to put through the power plant and draw it down so as to be ready to take care of the spring flood.

Mr. ELMQUIST. That is more than a probability, is it not?

Mr. BACKUS. I do not say that it is just the thing to do, to go as near to the danger line as that, but, of course, all the value you would get there would be to take the storage when there is no inflow, use it up then, and fill the lake when it floods.

Mr. ELMQUIST. Does the water out of Saganaga lake at the present time flow down around the boundary or up around what is known as Hunter's Island?

Mr. BACKUS. We have not included anything excepting boundary waters.

Mr. ELMQUIST. I so understand, but I was just asking the question for information.

Mr. BACKUS. Well, in shaping up these answers I have asked our boys to prepare only the boundary waters. So if that is not a boundary water it would not be in this report.

Mr. ELMQUIST. That is a boundary line established by the commission?

Mr. BACKUS. Yes.

Mr. ELMQUIST. But you cannot tell me whether the water that flows out of Saganaga lake goes down along the boundary or up along Hunter's Island?

Mr. BACKUS. The fact that there are two storage dams on it would indicate that it would be necessary to make a shut-off at one point.

Mr. ELMQUIST. Which way does the water run now?

Mr. BACKUS. I think it runs both ways. Otherwise, it would not be necessary to make two dams.

Mr. ELMQUIST. In which direction is the greatest flow?

Mr. BACKUS. I could not say.

Mr. HURLBURT. I happen to be familiar with the condition there. I know that the water flows north around Hunter's Island, but there is a very small dividing line between Saganaga and the lakes on the south side, so that all water at the present time is flowing northwest around Hunter's Island.

Mr. ELMQUIST. That is all at the present time, Mr. Chairman.

Mr. WILKIE. Mr. Chairman, I do not know that I quite conceive the position we are in. Mr. Backus is here in a twofold capacity; solicitor or counsel and client. As counsel he is not subject to cross-examination.

Mr. CLARK. I think the matter of cross-examination is one that can well be eliminated and we will not call it cross-examination; but any questions that any person desires to ask of Mr. Backus to elicit his position will be permitted, that is, if Mr. Backus desires to submit.

Mr. WILKIE. I thought that we who may desire to cross-examine should not now by either asking or not asking questions lose our opportunity to cross-examine Mr. Backus if he went into the witness box on evidence on his own behalf.

Mr. CLARK. I think we can eliminate the cross-examination, and any person is at liberty to ask Mr. Backus any question that he chooses.

Mr. WILKIE. We all appreciate the fact that Mr. Backus is not under oath, as I suppose the other witnesses will be.

Mr. CLARK. Well, I doubt it.

Mr. POWELL. If counsel goes on the stand you can cross-examine.

Mr. WILKIE. I had assumed that the witnesses were to be sworn. I had, of course, observed that Mr. Backus was not.

Mr. CLARK. It is not customary at hearings like this to put anybody upon their oath. What we are seeking is information.

Mr. WILKIE. I quite see and I think that is quite all right.

Mr. CLARK. I think I have made our position clear, that you are at liberty to ask Mr. Backus any questions that you desire to ask him and which he is willing to answer.

Mr. HURLBURT. Mr. Backus, in attempting to maintain a certain maximum level will it not be inevitable that at times you will exceed that level?

Mr. BACKUS. Possibly.

Mr. HURLBURT. Even to a considerable extent, and it may be as much as it was in 1916 on Rainy lake, three or four feet?

Mr. BACKUS. Yes, sir; that is always possible; but in these upper waters there is not as much danger of that because there is not so

much of an uncontrollable flow that you have to maintain. In Rainy lake that may be true.

Dr. DUNSMOOR. Mr. Backus, in this matter of making dams between these lakes is it contemplated putting in locks so that the damage that might be done to beauty might be in part offset by the facility with which the extent of travel by boat could be made less difficult?

Mr. BACKUS. That is entirely a matter for the governments and this Commission to pass on in approving the plan. We do not get very far without the recommendation of this Commission.

Dr. DUNSMOOR. But a recommendation for locks has not been approved?

Mr. BACKUS. No. It is quite an expense, in the first place, to put them in, and, in the second place, to operate them.

Mr. PREUDHOMME. These estimates that you have been making of the costs of the works; do those include locks?

Mr. BACKUS. No, sir.

Mr. PREUDHOMME. Have you any idea what the locks would cost?

Mr. BACKUS. None whatever. If we should have a lock in every one of these dams you would vote for it regardless of how it might affect the country, would you not, Dr. Dunsmoor?

Dr. DUNSMOOR. No; I would not.

Mr. PREUDHOMME. Mr. Backus, what do you say is the cost of the present works on Namakan and Rainy which you are attempting to effect?

Mr. BACKUS. That is one of the questions that we have not answered.

Mr. PREUDHOMME. I know you have not.

Mr. BACKUS. I prefer not to answer that at this time, not on your account, but for other reasons.

Mr. PREUDHOMME. But we would like to know.

Mr. BACKUS. Well, you can get that information at the proper time.

Mr. PREUDHOMME. You make an estimate of the amount of power that you would get in Lac LaCroix?

Mr. BACKUS. Yes, sir.

Mr. PREUDHOMME. What range would that allow?

Mr. BACKUS. I would have to consult the engineering figures on that.

Mr. PREUDHOMME. You do not know yourself?

Mr. BACKUS. I do not remember.

Mr. PREUDHOMME. It is not seventeen feet, is it?

Mr. BACKUS. I think it is between sixteen and seventeen feet.

Mr. PREUDHOMME. That is the increased elevation. Is that the range?

Mr. BACKUS. I think we figure the storage at that.

Mr. WILKIE. Mr. Backus, when was your dam here built?

Mr. BACKUS. It was started in 1905 and completed early in 1909.

Mr. WILKIE. And as completed was it in substance what we now find it?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. Prior to building that dam did you file plans with the Public Works Department at Ottawa?

Mr. BACKUS. Yes, sir. I will qualify that for this reason: We got our plans approved by the Public Works Department at Toronto first. Then we got approval later at Ottawa, and then after the approval we made some changes in the plans in 1908. I do not remember whether they were approved at Ottawa or not. They were approved at Toronto. But so far as the height of the dam is concerned, the only change made was in the number of units; the units were reduced and made larger, so that as far as the government is concerned there was no change made.

Mr. WILKIE. The units of what?

Mr. BACKUS. The size of the power units.

Mr. WILKIE. I see.

Mr. BACKUS. They were reduced and very much increased in size so that the development on each side was increased very greatly.

Mr. WILKIE. The size of your wheels and your penstocks?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. How about the size of your sluices? Was that changed or the number changed?

Mr. BACKUS. The number of units was reduced and the size increased.

Mr. WILKIE. Was any additional provision made after your plans had been approved for waste water?

Mr. BACKUS. I do not think it was a material change. The size of the gates or something of that kind was changed.

Mr. WILKIE. You see, Mr. Backus, that is one of the things in which we are all very deeply interested, because waste water affects practically everybody except yourself. If you have the information I would like to get it. Probably you have not that information now.

Mr. BACKUS. I can give you that information very rapidly from the office.

Mr. WILKIE. You understand that it affects the head below and the head above.

Mr. BACKUS. Exactly.

Mr. WILKIE. You spoke of the height of the water. I understand that you mean the gauge reading of today.

Mr. BACKUS. The gauge reading of Saturday according to our records at Ranier was 496.4. Mr. Scovil gave it as 496.3.

Mr. WILKIE. But in order that there may be no misunderstanding, you mean the actual guage reading?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. The normal high water level of Rainy lake is now how much?

Mr. BACKUS. Four hundred ninety seven.

Mr. WILKIE. Is that a matter of your own observation or from information derived from your engineers?

Mr. BACKUS. Well, both.

Mr. WILKIE. They correspond?

Mr. BACKUS. Yes.

Mr. WILKIE. Let us understand this water level business. It is not so easy for some of us to understand. We speak of the low water level and the normal level.

Mr. BACKUS. Well, when the extreme high water mark is 501, we will say, on Rainy lake, which might be the flood of 1916, your water comes up and stays maybe for ten days or two weeks and goes down and will not recur again for ten years.

Mr. WILKIE. That is an extraordinary phenomenon?

Mr. BACKUS. That is unusual.

Mr. WILKIE. Let us get it out of our minds because we cannot clear it up now.

Mr. BACKUS. Well, do not take me as authority for this. You can get the decisions of the courts and that will be a good deal better.

Mr. WILKIE. It is an extreme high water mark that occurs perhaps once in a very long period?

Mr. BACKUS. That is it.

Mr. WILKIE. Then you have another high water mark which is the height to which in an ordinary year this water rises?

Mr. BACKUS. It may be in a dozen or more years. It may occur once in two or three years.

Mr. WILKIE. Now we have the terms defined, I think. This annual high water mark you say is now about 497?

Mr. BACKUS. Yes; what we call the normal high water mark.

Mr. WILKIE. Do you know what it was prior to the building of your dam?

Mr. BACKUS. That was the point.

Mr. WILKIE. As to that, then, are you speaking from your own knowledge or from information obtained from the engineers?

Mr. BACKUS. I have myself seen the water higher than that before we built the dam, but it is largely from the photographs that the engineers have taken around the lake.

MR. WILKIE. Then, would this be your view of it: That the present normal high water mark is quite unaffected by the building of your dam? I may say that I got an entirely opposite impression from what I was able to read of the Lake of the Woods investigation.

MR. BACKUS. I do not think I understand your question.

MR. WILKIE. I asked you if the impression you intended to convey was that the normal high water level was entirely unaffected by the building of your dam. You told us it was 497 before and it is now 497, and you say it has not been affected either up or down by your dam.

MR. BACKUS. I say that the level has been held more uniform than in a state of nature.

MR. WILKIE. That was another thing I was coming to.

MR. BACKUS. But, as a rule, before the dam was built I think excepting in low water years like last year, for instance, the water would go to 497 for a certain period.

MR. WILKIE. In ordinary years?

MR. BACKUS. Yes.

MR. WILKIE. We are back, then, to the question I previously asked you. Your present dam has not affected the normal or annual high water level?

MR. BACKUS. Not very much. Do you want me to tell you why? Because the outlet at Pithers Point has less escape for the water than our works at the dam. If you want me to give you those figures I will figure that out for you.

MR. WILKIE. It is not for me to ask you to give them. I would like to have them from some one.

MR. BACKUS. There is a limit to the amount of discharge that will go through at Pithers Point and that is less than our discharge through the wheels.

MR. WILKIE. In that event, the level about Pithers Point should be greater than below it?

MR. BACKUS. It is.

MR. WILKIE. How much?

MR. BACKUS. Well, depending on the stage of water from, as a rule, four inches to fourteen or fifteen inches.

MR. WILKIE. That is the situation?

MR. BACKUS. Absolutely.

MR. WILKIE. Then, where are you going to take this new level from, above Pithers Point or below?

MR. BACKUS. Above.

MR. WILKIE. So you might have a level of 500 in the upper lake and only a foot and a half down below?

Mr. BACKUS. You might have 500 up there and normally, with the water controlled, as we are recommending, probably 499.5 in the Rainy river below, on an average. There would be times when the difference would be greater than that and there would be times when it would be less. Suppose for some reason we should shut off all but 500 second feet; the inflow being 8,000 and the outflow 5,000. The difference between Rainy lake and the river below would be less, whereas if you pulled the water hard, opened up the openings, there might be a foot and a half.

Mr. WILKIE. Did you ever see it a foot and a half?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. When?

Mr. BACKUS. Well, I will not say a foot and a half, but I will say over a foot. It was at the time of the flood when we had all the waste gates opened and the dam was sucking all the water there was.

Mr. WILKIE. I will not go into details with you because I do not think the occasion is here. Your dam provides certain means for wasting water as well as letting water run through your wheels?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. Are you now under some regulation as to the amount of water that you must have pass through that dam per day?

Mr. BACKUS. The Public Works Department—I do not know what authority they had for doing it—have asked us during the open navigation season to discharge up to 5,000 second feet as a minimum, and we have complied with their instructions. Now, I do not remember that the War Department has ever given us any instructions. We have received instructions from the Public Works Department of Canada, but I do not remember that we ever received any instructions from the War Department. I imagine that the War Department and the Department of Public Works could jointly fix a regulation that we would not hesitate about observing.

Mr. WILKIE. Do you think the War Department could induce you to do something they wanted done?

Mr. BACKUS. What?

Mr. WILKIE. Do you think the United States War Department could induce you to do something if they wanted it done and you did not?

Mr. BACKUS. Yes; I think so.

Mr. WILKIE. You told me a moment ago that this request, or direction, or whatever it was, as to the 5,000 second feet was complied with. Are there not times when less than 5,000 feet do pass through your dam?

Mr. BACKUS. I think so, yes; in the winter.

Mr. WILKIE. And in the summer?

Mr. BACKUS. Well, I doubt it.

Mr. WILKIE. Have you records as to what amount of water passed over those falls which you killed by your works, in a state of nature?

Mr. BACKUS. Which falls are those?

Mr. WILKIE. The falls where your dams are now.

Mr. BACKUS. Do you mean records of what passed over there in a state of nature?

Mr. WILKIE. Yes.

Mr. BACKUS. No; nothing reliable. We did more or less engineering on that for two or three years ahead of time, but if we took records it was only over a limited period. They would not be dependable records.

Mr. WILKIE. You could not tell us what minimum flow there was there before the dams were constructed?

Mr. BACKUS. No; I could not.

Mr. WILKIE. Mr. Backus, you have told us of things that were to be done. You must pardon me, but your statements came much more rapidly than ordinary testimony does and we lawyers who are accustomed to getting evidence by questions and answers could not get it down. If I have not got it all you will have to recognize that my mentality does not function so rapidly. How many dams in all, outside of the dam at Rainy lake, were to be built?

Mr. BACKUS. New dams?

Mr. WILKIE. New dams and raising old dams.

Mr. BACKUS. At four different points. There were at two points two dams, but that means to you only one point of damage.

Mr. WILKIE. No; I want to get the actual physical aspect of it.

Mr. BACKUS. Two at Lac LaCroix, one at Crooked lake, two at Basswood lake and two at Saganaga.

Mr. WILKIE. I make that to be seven.

Mr. BACKUS. That is seven; that is correct.

Mr. WILKIE. Then, who is to build these works?

Mr. BACKUS. We will have to let the Commission answer that question.

Mr. WILKIE. Who is to pay the price for building them?

Mr. BACKUS. We have made our recommendation.

Mr. WILKIE. At any rate, it is not Mr. Backus and his associates?

Mr. BACKUS. Part of it. We say we are willing to contribute.

Mr. WILKIE. Oh, yes; when the assessment is levied.

Mr. BACKUS. Yes, sir.

Mr. WILKIE. But in the meantime while things are going up it is just in the wide air, a castle in Spain?

Mr. BACKUS. That has all to be worked out.

Mr. ELMQUIST. May I ask just one question to clear up a doubt in my mind? When Mr. Backus made his recommendation that the two governments should pay one half of the cost, did he then refer to the damages that would be caused by the flowage or to the total cost of the damages plus the development of the project?

Mr. BACKUS. Both.

Mr. WILKIE. So I understood it. So we have this: There is a dam, I understand, at Namakan lake?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. And one at Kettle falls?

Mr. BACKUS. There are two at the outlet of Namakan lake.

Mr. WILKIE. No; I mean there are already existing actual structures at Namakan lake.

Mr. BACKUS. Yes.

Mr. WILKIE. And one at Kettle falls?

Mr. BACKUS. No; that is Kettle falls. There is one at Kettle falls in the international boundary and one on the other side of the island on Canadian territory exclusively.

Mr. WILKIE. Who built those?

Mr. BACKUS. The Rainy River Improvement Company and the Ontario & Minnesota Power Company.

Mr. WILKIE. That is, you yourself and one or other of your companies?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. And there are existing dams on and about the Rainy lake?

Mr. BACKUS. No. There is a dam now at the outlet of Lac des Mille Lacs on the Canadian side.

Mr. WILKIE. Who built that?

Mr. BACKUS. The Seine River Power Development Company.

Mr. WILKIE. Another of your companies?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. So we have this situation: So far as actual structures are concerned, in building dams on streams tributary to Rainy lake and water courses running out of Rainy lake they have all been paid for by Mr. Backus and his associates.

Mr. BACKUS. We paid all of the bills and also at the outlet of Lake of the Woods and gave these boys down the river all the benefit. You know they do not want to give that up.

Mr. WILKIE. Being a stranger, Mr. Backus, perhaps you will pardon me, but the thought passes through my mind, paid bills so far as they are paid. I understand that no damages have yet been paid to anybody.

Mr. BACKUS. Well, they have been trying awfully hard to establish some damages. I think you will find that we have all the lawsuits that they have dared to bring.

Mr. WILKIE. Then, we have this: That while you have in your mind, at any rate more or less on paper, plans for increasing the capacity of certain dams and plans for the building of certain new dams, you have not the faintest idea of building them at your own expense.

Mr. BACKUS. Do you mean our companies alone to pay all the bills?

Mr. WILKIE. Yes; your different companies.

Mr. BACKUS. No.

Mr. WILKIE. And you have no more definite idea, I suppose, upon financing or designing than those which you have put before us here?

Mr. BACKUS. That is true.

Mr. WILKIE. So of course you cannot tell at all what provision any of these dams would have for permitting waste water to escape?

Mr. BACKUS. For waste water from the storage?

Mr. WILKIE. Yes.

Mr. BACKUS. It would all have to be provided for.

Mr. WILKIE. In some way which you have not yet determined?

Mr. BACKUS. Yes.

Mr. WILKIE. Has it occurred to you that the level on Rainy lake would be dependent on the sluices on these different dams being opened at certain times?

Mr. BACKUS. Yes.

Mr. WILKIE. And in order to do that it would be necessary to keep men at each dam?

Mr. BACKUS. Yes.

Mr. WILKIE. So that the system would involve this, that you would have to have seven gangs of men, each one in charge of a dam, for water coming into Rainy lake.

Mr. BACKUS. Well, I will say this as to that, if arrangements were made for the development of power, wherever there was a power plant that plant would be required to open and shut the gates whenever so directed by the Commission.

Mr. WILKIE. Yes, but I want to get the size of the duty we are going to hand over to the Commission, first of all. There are going to be seven of these dams whose sluice gates have to be opened.

Mr. BACKUS. Where there are two dams, one for instance at the north end of Lac LaCroix, there would not be any occasion for opening that in the winter time at all only in case somebody got a drive of logs down that far and had to have some water. When the drive was over the dam would be closed. But the other dam would have to be regulated.

Mr. WILKIE. But at any rate there would be five or six there?

Mr. BACKUS. That expense would be very nominal.

Mr. WILKIE. That would be, the water coming into Rainy river and the water going out of Rainy lake would be governed at your existing dam here?

Mr. BACKUS. Yes.

Mr. WILKIE. The sluice gates in your dam of course are entirely in the dam itself?

Mr. BACKUS. Yes.

Mr. WILKIE. And that dam is the property of your company?

Mr. BACKUS. Yes.

Mr. McCLEARN. Referring to the chain of lakes on which you propose to build or have built these reservoirs, is it true that they start at what is known as the watershed of the North lake?

Mr. BACKUS. Yes.

Mr. McCLEARN. And they include all of the lakes and rivers which form the boundary between the watershed of the North lake and the falls here, International falls—that whole stretch of boundary from North lake to the falls here at International Falls would be included in this project that you wish initiated?

Mr. BACKUS. Yes.

Mr. McCLEARN. Are there any villages or cities on the banks of any of those lakes or rivers other than Fort Frances and International Falls?

Mr. BACKUS. You include Ranier?

Mr. McCLEARN. Yes, and Ranier.

Mr. BACKUS. No sir.

Mr. McCLEARN. The only control of those international waters between International Falls and the watershed of the North lake existing at the present time consist of the dam here which you have just referred to at International Falls which is owned and controlled by your company and the one that you have at Kettle falls?

Mr. BACKUS. That is true.

Mr. McCLEARN. As regards the dams at Kettle falls, one of them is entirely in Canadian territory?

Mr. BACKUS. And the other on the international boundary.

Mr. McCLEARN. Those dams at the outlet of Namakan lake into Kettle river now control the waters on the international boundary east and north up to the watershed of North lake. Is that true?

Mr. BACKUS. The dam at the outlet of Namakan?

Mr. McCLEARN. Yes.

Mr. BACKUS. Yes.

Mr. McCLEARN. If any of these proposed dams were built in the places specified in the letter which you have submitted to the Com-

mission, they would all be controlled would they not, by your dams here and at Kettle falls?

Mr. BACKUS. Well, the water would have to pass through both of those dams.

Mr. McCLEARN. There are no industries anywhere that they would serve until they got here, assuming that these dams were put in at the places you suggest?

Mr. BACKUS. Do you mean the water or the power?

Mr. McCLEARN. The water.

Mr. BACKUS. Well, if the power developed—

Mr. McCLEARN. I am trying to keep the power out. I am just referring to the water.

Mr. BACKUS. There would not be any use for water for power purposes until the water got to International Falls.

Mr. McCLEARN. And at the present time, as you say, there are no cities or villages or industries anywhere else than here at Ranier, Fort Frances and International Falls?

Mr. BACKUS. That is true.

Mr. McCLEARN. This dam at the outlet of Lake Namakan controls at the present time the waters of Lake Namakan, Lake Kabetogama, Crane lake, Little Vermilion, and Loon lake, does it not?

Mr. BACKUS. Yes.

Mr. McCLEARN. One of your proposals is that a dam be put in at Loon lake?

Mr. BACKUS. This does not control Loon lake. That is on a different level.

Mr. McCLEARN. It controls Sand Point lake?

Mr. BACKUS. Yes.

Mr. McCLEARN. That is the one I was thinking of. The use of that water for storage would serve only private purposes then, would it not?

Mr. BACKUS. I do not understand that.

Mr. McCLEARN. If any of these dams, reservoirs, were built, as things are at present they could serve only as a water supply for these companies here at International Falls and at Fort Frances?

Mr. BACKUS. No, all the way down the river.

Mr. McCLEARN. Below here?

Mr. BACKUS. Yes.

Mr. McCLEARN. They, however, would all be controlled by those dams that you have at Kettle falls and International Falls.

Mr. BACKUS. Well, they would be controlled to the extent that they were regulated; yes.

Mr. McCLEARN. There is no government regulation on the dam at Kettle falls, is there?

Mr. BACKUS. Well, no, not strictly government regulation.

Mr. McCLEARN. There never has been any?

Mr. BACKUS. Well, partial.

Mr. McCLEARN. To what extent would you say?

Mr. BACKUS. Well, I cannot state definitely, but I think there has been partial regulation. Just how and why I would not say because I do not make a statement unless I know it is absolutely correct, but my impression is that there is some partial regulation of the Kettle falls discharge. That may not be true but I can find out.

Mr. McCLEARN. You have not at the moment any recollection of the United States Government—

Mr. BACKUS. No, not the United States Government, they have not attempted to regulate it here or at Kettle falls.

Mr. McCLEARN. Is it your idea in submitting this request to the Commission, that this water should be stored east of Sand Point lake in these several reservoirs for any considerable period of time without doing damage to the lake shore and surrounding country?

Mr. BACKUS. Well, whenever you establish your maximum level in those lakes, if there is any timber value of course you want to save that because sooner or later up to that level it is going to be injured.

Mr. McCLEARN. Well, take for instance Lac LaCroix, at the present time the shore line on both sides is heavily timbered.

Mr. BACKUS. Well, no.

Mr. McCLEARN. The lake itself is full of islands that have timber on them.

Mr. BACKUS. Well, all of that is of nominal value.

Mr. McCLEARN. You are speaking now entirely from the standpoint of the lumberman looking for merchantable timber, are you not?

Mr. BACKUS. Well, yes, when you speak of timber, I am answering the question from a commercial standpoint.

Mr. McCLEARN. But from a scenic point of view Lac LaCroix is perhaps one of the most beautiful lakes in the country; is that true?

Mr. BACKUS. Well it is a beautiful lake all right enough, but what good does that do if only a hundred people a year can see it? When you get your maximum water line established and you get your timber cut off that will be under water, you will have just as beautiful a lake as you had before, as far as beauty is concerned.

Mr. McCLEARN. You mean if permission was granted to build a reservoir here that would raise the level of Lac LaCroix seventeen feet and submerge many of these islands, leaving sticking out merely

the tops of trees, that it would not be damaged from a scenic point of view?

Mr. BACKUS. Now, of course, you are asking me something you do not know anything about yourself and you know I do not know enough about it to answer that question. You have the advantage of me in asking questions.

Mr. McCLEARN. I would not like to take any advantage of you.

Mr. BACKUS. Nothing will be gained until we get the contours of all these things worked out. Then we can commence to get that threshed out. But from the information I have received from our engineers—I never was on Lac LaCroix, I am sorry to say—I believe that very little injury will be done to the beauty of the lake, either to the islands or in any other way after the project is once worked out according to our recommendations. That will all be determined by the government engineers when they get their surveys. They have to make these surveys in any case and anything we do to-day is not going to stop this investigation.

Mr. McCLEARN. I do not know.

Mr. BACKUS. You might as well realize that first as last.

Mr. McCLEARN. There are many thousands of people of course who are interested in these lakes from other than a commercial point of view and that are here or represented here because—

Mr. BACKUS. I think they will be represented just as much after this suggestion of ours is taken into consideration as before.

Mr. McCLEARN. We would like to be informed as to what it is we may expect. Speaking of your engineers' report, is there any objection to submitting to the Commission and to counsel representing these several interests what these recommendations are based on. If they are not going to hurt us—

Mr. BACKUS. Would it not have been better to have found out that before starting the propaganda? But seeing that the propaganda has been started, I am perfectly satisfied to let you or the Izaak Walton Club go ahead with it, feeling absolutely assured that when you get to the end of it you will be better satisfied with the situation as it will be after our suggestion is carried out than you are to-day.

Mr. McCLEARN. There are two answers to your statement. Many inquiries have been made, as the Secretaries of the Commission will no doubt attest, for some information as to what the purpose of this hearing was, as to whether any application had been filed, whether any maps or charts had been filed as a public record from which one might ascertain what you propose to do and nothing of that kind was available. As to propaganda, the answer is that there are, as I have stated, literally thousands, if not hundreds of thousands of people who are interested in these lakes and what you designate as propaganda in fact.

Mr. BACKUS. But who is there available that can tell you that this will not improve the condition there rather than injure it?

Mr. McCLEARN. We are going pretty largely on this: At the time you built the dam at Kettle river we are informed that the bed of that river was blown out to a depth of something like four feet and the rapids in Crane lake and the tributaries there are by that fact lowered that much and at times it is impossible to get a canoe through some of these rapids because they are four feet lower than they otherwise would have been if it had not been for the blowing out of the natural bed of the river at Kettle falls. We are basing our fears as to what will happen on these other lakes on what actually did happen at Kettle lake.

Mr. BACKUS. Do you realize that these plans were submitted to the two governments before the work was done?

Mr. McCLEARN. But if they had had this propaganda as you designate it, if they had had proper representations made, is it conceivable either one of those governments would have permitted that thing to be done in that way?

Mr. BACKUS. The answer to that is, if the level could not be reduced in Namakan lake to the point where it is proposed, then this Commission has a right to fix the minimum and that reduces the storage. In other words, perhaps it would be better, if you knew the facts, to arrange to put it to a lower level and get the same amount of storage than to get it to the higher level with only the same storage. I do not know whether you catch the point. For instance, if you want a range of say ten feet of storage on a lake and you can get it by making the opening at the outlet of the lake say three feet lower, then you have only to build your dam and raise the water seven feet instead of ten, so that it is not a question you can sit here and pass on as to what should be done.

Mr. McCLEARN. Is this not true? Assuming for the moment that the Commission were of opinion, after hearing the evidence here, that permission should be given to put in those reservoirs and there are places where you would raise the water fifteen, seventeen, twenty or more feet, the regulation of the flow of that water would be in the control of your industry, would it not?

Mr. BACKUS. No. We have made a recommendation as to the higher level and we have left it to the Commission to say what the minimum should be and are leaving the regulation to them.

Mr. McCLEARN. But between the maximum and minimum there, the regulation would be as you found it necessary to use that water here at the falls, would it not?

Mr. BACKUS. If our suggestion is carried out, the benefit will accrue to every point between the dam itself and down to Lake Winnipeg. This Commission, or whoever the tribunal is that is

going to regulate these dams, must consider the benefits in their decision.

Mr. McCLEARN. The people for whom I am privileged to speak are interested in the lakes east of here. For instance, you cannot now, because of the dam there, come down Namakan, we have to stop at Kettle falls. The Izaak Walton League and others are interested in the lakes at other places, but we will take this chain of lakes where you are asking that these reservoirs be established. It is true that there is absolutely no commercial navigation on these lakes?

Mr. BACKUS. Not any large amount.

Mr. McCLEARN. Do you know of any?

Mr. BACKUS. Yes. Our forest protection service take up their supplies to Kettle falls into Namakan lake and by river in boats from there. I do not know of any boat line that is running as a commercial enterprise.

Mr. McCLEARN. Aside from interests represented by Mr. Elmquist here, and your own company, you do not know of any lumber interests that are interested here, do you?

Mr. BACKUS. Well, I do not think he represents the Border Lumber Company, some of the producers of ties on the Canadian side, and so forth. I think there are several other interests.

Mr. McCLEARN. Yes, but none as large as those represented by yourself and Mr. Elmquist?

Mr. BACKUS. No.

Mr. McCLEARN. Aside from your company and those lumber companies represented by Mr. Elmquist, there is nobody interested in that chain of lakes except private owners outside of the State of Minnesota?

Mr. BACKUS. You mean individual corporations?

Mr. McCLEARN. Yes.

Mr. BACKUS. The State of Minnesota is not interested in these corporations. The large people are the ones you have mentioned.

Mr. McCLEARN. The ones represented by you and Mr. Elmquist are the only private interests of any size or dimension?

Mr. BACKUS. The smaller interests probably would add one-third. Taking those he represents and those we represent, all the rest together might amount to as much as one-third.

Mr. McCLEARN. Aside from such activities as are carried on by your company and those represented by Mr. Elmquist, that whole territory on both sides of the international waters is in a state of nature?

Mr. BACKUS. Well, there are these other interests I speak of. Largely in a state of nature.

Mr. McCLEARN. Some reference was made in your letter and in answer to Mr. Elmquist's questions about the possible power development at the places where these dams are proposed to be built. There is no company seeking those sites for power development at the present time is there?

Mr. BACKUS. Yes, provided this arrangement is made.

Mr. McCLEARN. But that is merely a matter between your company and some power company that have been negotiating in the event of this arrangement being made, that they would—

Mr. BACKUS. Develop the power.

Mr. McCLEARN. And sell it to your company?

Mr. BACKUS. Well, we would have a call on a part of it, but probably we would take only a small part.

Mr. McCLEARN. At the present time, however, this proposal is based not on any public necessity, nor primarily is it a power project, but as an arrangement for storing water to be used at Kettle falls and here at International Falls?

Mr. BACKUS. Well, and all along the line, and the development of power. The whole scheme would work together.

Mr. McCLEARN. I am speaking now of your letter to the Commission and your representations with reference to why it should be done. That has to do with the storing of this water in these reservoirs for a private purpose, to serve these dams.

Mr. BACKUS. To serve all the power interests at and below International Falls and Fort Frances and any new developments that are made on the upper waters.

Mr. McCLEARN. None of those is before the Commission, though, at the present time on this proposition?

Mr. BACKUS. I understand that none has been submitted but I understand from Mr. Thomas that he is going to submit his proposal at this hearing.

Mr. McCLEARN. You are not speaking for him or the interests he represents?

Mr. BACKUS. No.

Mr. McCLEARN. Up to this point it is fair to assume is it that your own companies only are petitioning for this scheme?

Mr. BACKUS. I could not answer that. I know we are, but I do not know how many others are. I can answer only for myself.

Mr. MURRAY. What protective works do you propose to construct to protect property on the Fort Frances side of the Rainy river from flooding due to the increased elevation you propose?

Mr. BACKUS. Well, I cannot give you that without consulting the engineers. It has been some time since they gave me the details of that. As a matter of fact that was figured out, I think,

in Mr. Meyer's time. That was several years ago, but it was re-figured by us in 1922, when we raised his estimate from twenty-five thousand to forty thousand odd.

Mr. MURRAY. As a matter of fact the present dyke would be absolutely inadequate to protect the shores from flood waters or higher level.

Mr. BACKUS. Of course that is a matter of detail to work out.

Mr. MURRAY. Your engineers no doubt know.

Mr. BACKUS. But your statement that it is entirely inadequate would not mean anything to me or anyone else. It is a question to be worked out in detail.

Mr. MURRAY. But you know as a matter of fact that when the water level is up to 497, say, it seeps through the dykes and floods the streets and property?

Mr. BACKUS. I do not agree with you at all.

Mr. MURRAY. Your observation probably has not been quite as acute as mine.

Mr. BACKUS. Yes, it has been just as acute.

Mr. MURRAY. Well, we can produce testimony as regards that. You think \$40,000 would take care of the additional protective work?

Mr. BACKUS. Forty thousand dollars odd I think is the estimate.

Mr. MURRAY. I am told that the proposed dam that was to have been put down but that had not been constructed is estimated to cost, if the work had gone on, about \$40,000 itself.

Mr. BACKUS. I would not undertake to give you those figures offhand.

Mr. MURRAY. Can you get your engineers' estimate and statement of what the proposed protective work would consist?

Mr. BACKUS. Well, if it happened to be more or less, that would not affect the plan. When the plan is approved by the Commission, if it costs \$50,000, that is one thing; if it costs \$75,000 that is another.

Mr. MURRAY. But it is a very serious element in the question of cost, is it not?

Mr. BACKUS. Not at all serious.

Mr. MURRAY. Say \$100,000 or \$150,000 possibly.

Mr. BACKUS. The benefits accruing from this suggestion make the question of the cost of any sort of contemplated plan of very small consequence.

Mr. MURRAY. But one of the objects of this investigation is to obtain an estimate of the possible cost.

Mr. BACKUS. Well, a rough estimate. The estimates we have made on these upper reservoirs are only rough estimates.

Mr. ELMQUIST. What other interest besides your own on the American side would need to utilize power that can be developed along the international waters?

Mr. BACKUS. Do you wish me to answer that question seriously?

Mr. ELMQUIST. Yes.

Mr. BACKUS. I think you could go down the Iron Range and sell 50,000 horsepower or more.

Mr. ELMQUIST. At what points?

Mr. BACKUS. At various points.

Mr. ELMQUIST. Name them.

Mr. BACKUS. Well, I am not going to name them. I have not canvassed the situation.

Mr. ELMQUIST. That is just a surmise of yours?

Mr. BACKUS. No; it is not a surmise.

Mr. ELMQUIST. Are not all of these range towns supplied by the Minnesota Water Power Company?

Mr. BACKUS. I think all the power they have is the power development of that company.

Mr. ELMQUIST. Do you know whether that company is selling now all the power it can produce?

Mr. BACKUS. I only know this, that their engineer said to me a year ago they were going to be short of power. I asked him how much, and he said possibly 50,000 horsepower within a year.

Mr. ELMQUIST. Did he indicate at what points that power could be used?

Mr. BACKUS. No; I did not ask him that.

Mr. TIBBETS. Did the estimate that you gave us take into consideration the destruction of Pithers Point park to the town of Port Frances?

Mr. BACKUS. I could not answer that. I have not the details. Probably not.

Dr. DUNSMOOR. Does the 500 point not mean at the dam or does it mean at the lake?

Mr. BACKUS. At Ranier.

Dr. DUNSMOOR. That does not contemplate the sixteen inch possible range. I think you said there was a variation between the dam and the lakes of sixteen inches?

Mr. BACKUS. With the level of the lake at 500, it would probably be six inches lower in the Rainy river below on an average during the year.

Dr. DUNSMOOR. The 500 bench mark means at Ranier and not at at the dam?

Mr. BACKUS. Yes.

Mr. WILSON. On Rainy lake do you really mean to try to hold the level at 500 bench mark from 497?

Mr. BACKUS. Yes.

Mr. WILSON. That is not one of your trading points. Assuming that you got the bench mark at 500 on Rainy lake, you would attempt to hold the water at that mark, would you not?

Mr. BACKUS. It would not be practicable to attempt to hold the water at 500. If you had authority to hold the maximum level at 500, it would not be practicable to undertake to keep the level at that.

Mr. WILSON. Why?

Mr. BACKUS. In the first place you would not get any benefit out of the storage. You would have to pull the lake in order to get any benefit out of the storage.

Mr. WILSON. You mean you would have to be pulling Rainy lake?

Mr. BACKUS. Yes, pull Rainy lake in order to get the benefit of the storage. I would think you would want to get it down lower in the winter in order to take care of the spring floods. You might have it around 500 if you were authorized to raise it to a maximum of 500, you might possibly keep it momentarily and you might keep it within a few inches of that for three months.

Mr. WILSON. But if you could keep it at 500, that would be a nice thing, would it not? It would give you that much more power here at the falls.

Mr. BACKUS. Of course it would be a nice thing, but that would not be the practical operation.

Mr. WILSON. If you did build dams up above Namakan lake, you would build them for the purpose of conserving water and eventually of letting it into Rainy lake and holding Rainy lake just as high as you could up to approaching the 500 bench mark, would you not?

Mr. BACKUS. We would like to, but these other boys down the river might object to that.

Mr. WILSON. I have heard them object before.

Mr. BACKUS. That is good.

Mr. WILSON. Let us assume that you had a dam at the lakes. When the water fills up there you would naturally hold it there to let it out into Rainy lake.

Mr. BACKUS. Well, the man developing power up there would object to that.

Mr. WILSON. He has not a power plant in there yet. Let us take the water. When you let that water out, you would draw from Namakan lake into this lake?

Mr. BACKUS. Yes.

Mr. WILSON. You would naturally hold it there to conserve it for use down here, would you not?

Mr. BACKUS. You are talking now about after you let it go up there.

Mr. WILSON. Let us conserve it first and then let it go. When you have it there, you will hold it up to the height of your dam in order to make sure, if no more flows in, you have it there.

Mr. BACKUS. This theorizing of yours does not get us anywhere. I am not at all worried by your questions, but it seems to me we are taking up the time of the Commission and you are asking impractical questions, because I have stated that the Commission will have control of these dams.

Mr. WILSON. I have seen this Commission—

Mr. BACKUS. You have not seen the Commission have control of anything yet.

Mr. WILSON. I have seen the Commission in 1916 and they had beautiful control. When you let your water out in these upper places you naturally hold your bench mark here at 500, if you can? That is not an impractical question.

Mr. BACKUS. Yes, it is. We will do only what the regulating tribunal tell us to do.

Mr. WILSON. I want to know what it will be. That is why I am asking these questions.

Mr. BACKUS. They will tell you.

Mr. WILSON. They have not been here as I have.

Mr. BACKUS. You know you are asking questions you never can get by with.

Mr. WILSON. Let us make the story short so as not to take up the time of the Commission. When you take the water up there, you will have it as high as you can hold it in the upper lakes and as high as you can hold it in Rainy lake; is that not true?

Mr. BACKUS. Do you want me to give you the same answer as I gave you before. We will not have a thing to say about it.

Mr. WILSON. I might address this Commission and ask them what they will do about this because I have not had an answer on this yet.

Mr. BACKUS. They will probably tell you they have not decided yet.

Mr. WILSON. There is no use for you and me taking up the time because that water will be conserved up there to be let into Rainy lake and then out of Rainy lake down your dam here.

Mr. BACKUS. That is the natural way for it to flow.

Mr. WILSON. I think the Commission has had it in their mind that this is an ordinary, nice condition that you can control. Let me tell you this. We do not control the condition and when this water is held up in Rainy lake, say a foot, sometimes there comes a burst of rain, not for a day or two, but for a month or two and it will fill those lakes so that you will have to draw the water from those

lakes all at once. You will have it like we did in 1916, you will be flooded out also. But there will be this difference. In 1916 the water could come out of those upper lakes but if this scheme is carried out, it cannot come out because the water is conserved; it must come out by the gates and consequently this part of the country will be kept flooded for months.

Mr. GUY. Mr. Backus, I believe it is a part of your proposed development to block the present outflow of water from Lac LaCroix and turn it into the international channel?

Mr. BACKUS. Yes; that is the suggestion.

Mr. GUY. In your opinion, would that be Canadian or American power that would be generated from the falls on the international line by the raising of that water?

Mr. BACKUS. I should think it would be international.

Mr. GUY. That is, half one and half the other?

Mr. BACKUS. Yes, sir.

Mr. LOMMEN. Regarding your statement as to the necessity for this change in the water flow, there is the matter of the development of private interests and the matter of the conservation of water flow, I understand from your statement, so as to prevent the rapid flow of water during flood times to equalize the flow and to store this water so as to have uniform cubic contents going over your dams at this time? Is that correct?

Mr. BACKUS. Yes, sir.

Mr. LOMMEN. One is to protect the adjacent country from flooding because of the stream freshets and the other is to develop for private interests. There are two points to consider alone. I just wondered whether you could give us any information that would indicate whether or not in fact there has ever been damage to the country east of Fort Frances by reason of heavy spring floods, other than the 1916 situation. Is there a recurrence annually in the spring of floods along the international border from North lake to Rainy lake for a distance of 120 miles?

Mr. BACKUS. I did not say there was.

Mr. LOMMEN. We want to know, then, whether this narrows down to the protection of private interests from flooding and if there has not been flooding in the past because of nature's course, is there any need to protect something?

Mr. BACKUS. You are only covering half the question, when you talk about having floods that are damaging in the spring.

Mr. LOMMEN. Let us call it high water.

Mr. BACKUS. Or high water. That is only half the question. If you can conserve those high water flows and distribute the water throughout the year you save the low water injury which affects the

public and everybody else, private and public interests as well, because the low water is even worse than the high water.

Mr. LOMMEN. Am I correct in assuming that the country along the international border for a distance of, say, approximately 120 miles east and west has never been seriously prejudiced by reason of high water in the past?

Mr. BACKUS. I think generally speaking that is true.

Mr. LOMMEN. So there is really no need for the construction of dams or reservoirs to protect that country from high waters that are expected to come?

Mr. BACKUS. You do not go clear through on that either. When you talk about the flood waters affecting the locations that we have suggested for dams on the boundary you must go to the waters below in the Namakan chain of lakes and in Rainy lake and the lakes below. There was quite serious damage from flood in 1916 all along the line, not in the Lac La Croix country or in the Basswood country or in the upper lakes country because there would not be anything to interfere there in any way in the spring of the year. Any overflow there might be would all be absorbed before it could do any damage. But there was considerable damage beginning with Namakan lake. The operators on Namakan lake were distressed quite a little in their logging operations, railroad operations and loading operations, and the owners of property claimed to have been damaged, and that was true of International Falls, Fort Frances, and all along the line, including Warroad and Kenora. The other end of it is that you save waters in the spring of the year and you do not walk across some of these rapids in the summer time without wetting your feet. It is just as important to prevent extreme low water as it is to prevent extreme high water and even more so.

Mr. LOMMEN. Outside the one act of God in 1916 there has been no serious damage from high waters in the country to the east, has there?

Mr. BACKUS. No; that is generally true, but it is in the way of preparation to take care of the situation in these off years that these directions are taken.

Mr. LOMMEN. May I ask a question in reference to your ridicule of an editorial which you commented upon here at some length, and that is regarding the propaganda. Just what has caused your comment of your program in relation to some of the lakes resulting today in a reduction in the elevation of your dams, namely, as to Basswood lake, which in your original application required an elevation in water level of five feet and which now you are content

to let stay as it is? What has prompted that change of attitude in respect to that one lake?

Mr. BACKUS. I cannot answer that definitely except to say that on the boundary waters any change in plan has been brought about by additional work done to figure out whether the expense would be justified. For instance, perhaps the storage there was not sufficient to justify the dams.

Mr. LOMMEN. I thank you.

Dr. DUNSMOOR. Was not the damage resulting from the flow or the excess of boundary water in Namakan and Kabetogama made by the fact that there was a dam in there that was put in two years previously?

Mr. BACKUS. If that dam had not been there the damage below International falls would have been even greater. During that period the entire watershed from the Namakan chain of lakes to the outlet of the Lake of the Woods was all inundated, the whole district.

Dr. DUNSMOOR. That water was held up here because of your being asked to take off the dams on the bank, was it not?

Mr. BACKUS. It was not; it was held up here—Mr. Magrath and Mr. Tawney were both here at the time—and was because people down the river were telegraphing to shut down the gates here to keep from flooding them more.

Mr. MAGRATH. Is that quite a correct statement, Mr. Backus, for you to make? My recollection is that we had to press you very hard to open up some gates here to let the water out.

Mr. BACKUS. Yes; but did not we get telegrams from Kenora and Warroad to shut off water, the complaint being that they were being flooded out and they wanted us to shut the gates here?

Mr. MAGRATH. That may be true, but I know we had to take action to get you to let some of this water out.

Mr. BACKUS. I can show you some of the telegrams if you do not remember it. We were getting telegrams from Virginia to open International falls and we were getting telegrams from Warroad and Kenora to close International falls.

Mr. Wilkie, when you asked me the question whether we were contemplating the building of any other dams than the seven you referred to, that was on the international boundary, was it not?

Mr. WILKIE. No; it affected all waters that are boundary waters. I wanted to get all waters that flow into Rainy lake.

Mr. BACKUS. My answer did not contemplate that question. I was just answering as to the boundary.

Mr. WILKIE. If the Commission please, I would be glad to have Mr. Backus' answer now.

Mr. BACKUS. We have already built a storage dam on Lac de Mille Lacs in contemplation of building powers on the same river at Sturgeon falls, Moose lake and Steep Rock. We have also done more or less investigating as to storage in Manitou and some of the lakes north of the Canadian line in Canada.

Mr. WILKIE. Mr. Chairman, I do not want to trespass upon your time, but may I ask some other questions?

Mr. CLARK. Go ahead.

Mr. WILKIE. In your contemplation, Mr. Backus, did you investigate the development of electric power at these places?

Mr. BACKUS. Yes, sir; on the Seine river.

Mr. WILKIE. Where do you propose to transmit that power?

Mr. BACKUS. To Fort Frances.

Mr. WILKIE. For use in your mill here?

Mr. BACKUS. Yes, sir.

Mr. WILKIE. Is that true of your other projected developments as well?

Mr. BACKUS. We have not gotten any further than that. I say that occasionally we investigate the storage possibilities on the Manitou, etc.

Mr. WILKIE. Then, you have one under contemplation whose objective is the development of electric power for your plant here?

Mr. BACKUS. Yes.

Mr. WILKIE. The other one contemplates nothing more than storage?

Mr. BACKUS. That is as far as we have contemplated it.

Mr. WILKIE. Is that all you wanted to answer? Does that complete your answer?

Mr. BACKUS. Yes; but I just wanted to say that my answer contemplated only as far as relating to the boundary.

Mr. WILKIE. Yes; I do not think there is any harm done since we get at the facts.

Mr. CLARK. Mr. Backus, you are asking that the two governments contribute one half the expense of certain works which you think would be advisable on this international boundary, saying that you yourself and other interested parties would contribute the remaining 50 per cent. I am not ready to assume that you have gone that far without some definite plan as to the works which you suggest.

Mr. BACKUS. Well, Mr. Chairman, I do not want you to go quite that far in assuming. I said that our company would be willing to pay its share of 50 per cent. I am not assuming that any other 50 per cent agrees.

Mr. CLARK. That is immaterial. Somebody would have to pay the other 50 per cent according to your statement.

Mr. BACKUS. Yes, sir.

Mr. CLARK. You are asking that the two governments contribute 50 per cent of the cost, whatever it may be, of improvements. Now, I assume—perhaps I am wrong—that your investigations and your business acumen would not lead you to make these suggestions to this Commission or to the two governments unless you had pretty accurately determined what plans were necessary for these projected improvements. Without asking you whether you have or have not developed those plans completely, I think I may venture to ask that if you have plans for those projected improvements you lay them before the Commission today in connection with your statement. Otherwise, you can see that we are absolutely working in the dark.

Mr. BACKUS. Well, Mr. Chairman, that was the questionnaire that you asked for an answer to, how the expense should be divided.

Mr. CLARK. But I am not speaking now about the expense; I am speaking about the project itself, about how far it has developed, without regard to what it may cost. In other words, the plan of construction and operation.

Mr. BACKUS. I have given you all the detailed plans that we have made as a rough estimate of the cost.

Mr. CLARK. Have you made application to the Canadian authorities on this matter, Mr. Backus?

Mr. BACKUS. I made an application to the Province of Ontario in 1920 covering these boundary waters, with the expectation that this question that we are considering to-day would be under consideration in the very near future, and I made the application largely so that adverse interests would not come in and make application and be in a position to block any project that was acquiesced in by this tribunal, without any definite plans or not nearly as definite at that time in making the application as the figures I have submitted to you today.

Mr. CLARK. But the figures you have submitted are absolutely indefinite as to construction. We know nothing about what you are asking the two governments to contribute toward the construction of a dam here or a dam there. We have no idea what the construction is in your view. You must have considered the matter from your own standpoint as to what sort of a structure ought to be erected at that particular point, it seems to me; otherwise, you can very plainly see, Mr. Backus, that we are absolutely in the dark.

Mr. BACKUS. I had no idea that the governments would contribute to any expense except in the way of storage. So that we have left. I have not considered any power development.

Mr. CLARK. No; but your storage and the power development are linked pretty closely together. Your storage requires construction of certain dams at certain points.

Mr. BACKUS. Yes.

Mr. CLARK. Have you any suggestions to make as to what should be done at these points, what sort of structures should be erected, what sort of dams should be erected, and the cost of such construction? In other words, what would be sufficient to fill the purpose of storage?

Mr. BACKUS. We can only do that in the rough, as we have done it, until you make complete and definite surveys and get contours and everything that pertains to the work.

Mr. CLARK. I do not think you understood my question, Mr. BACKUS. It does not make any difference as to the contours as to what sort of structure you want to erect at a certain point.

Mr. BACKUS. Yes, indeed.

Mr. CLARK. Have you not already done that?

Mr. BACKUS. No; we have not run contours.

Mr. CLARK. Then, you are as much at sea as we are.

Mr. BACKUS. Yes, sir.

Mr. CLARK. You do not know what sort of construction you want?

Mr. BACKUS. No, sir.

Mr. CLARK. You do not know how much you want? Who do you think is going to furnish that data to us and to you?

Mr. BACKUS. Well, if you said to us, you put your engineers to work and run these contours and if such and such a showing is made and such and such a condition develops we will recommend the building of these dams or we will accept your figures—I have never known a government to accept private figures or surveys of any kind.

Mr. CLARK. No, but have you ever known the government to volunteer to assist private parties in the construction of any sort of work without having had presented to it some definite plan for the construction?

Mr. BACKUS. We have not presented to you a definite plan because we do not want to go to that expense unless it is looked upon with favor.

Mr. CLARK. How can we look upon with favor a plan of which we know nothing?

Mr. BACKUS. But so far as our doing the engineering work is concerned and in giving our figures to you, your government would not accept them.

Mr. CLARK. We might not. We might want to revise them. We have our own engineers. They might take an entirely different

view of the situation. But until we have some definite statement as to what is desired by the parties advocating certain improvements how are we going to work?

Mr. BACKUS. I do not know any other way excepting as planned when this matter was under consideration before, that the Commission would proceed and make the investigation as to the upper waters. That, of course, contemplated that you would do on Rainy lake just as you did on the Lake of the Woods, make your surveys and run whatever contours you found were necessary in Rainy lake and the upper waters. That is what I supposed the plan contemplated by the Commission was.

Mr. CLARK. Well, I see we are at odds on that.

Mr. McCUMBER. If I understand you correctly, Mr. Backus, your position is that the two governments should investigate this entire project and determine what dams should be built, what waters could be conserved, what power could be generated at these different points, and the cost thereof, and after that has been determined by the government engineers it is time for you to present any plan that would conform to what the governments have ascertained for you in the matter of constructing the dams and developing the power. Am I right in that?

Mr. BACKUS. Yes; that is substantially right. I do not know that it would go so far as telling us under what plan to proceed to develop the power, but as far as the storage is concerned it is correct.

Mr. McCUMBER. I can scarcely understand, Mr. Backus, how we could arrive at any conclusion unless some one, the engineers or some one else finally presented a complete plan for this entire watershed. Then we could determine what to do and then only, and it would seem to me, as suggested by the chairman, that if you, or those interested in the power could also supplement the efforts of the engineers with those employed by presenting to them or to the Commission some scheme of development it would be of material help to us.

Mr. BACKUS. We would be very glad to do it if it would be agreeable to the Commission and its engineers. We have not been holding out on account of saving the expense, but we have waited after spending perhaps fifty thousand dollars in engineering work to find out what the attitude of the Commission would probably be.

Mr. McCUMBER. The present attitude is to ascertain the facts.

Mr. BACKUS. If we start in to get all the contours it is going to be expensive and it would be folly to do that if the Commission should indicate that they did not look with favor upon the general project. So far as these dams are concerned we have figured in the rough. If you should ask me to-day, will you do that work

on those estimated prices, while I would be gambling I would say yes. That is as near a plan as we can make until we get an absolute detailed survey.

MR. McCUMBER. You say you first desire to ascertain what the attitude of the Commission will be?

MR. BACKUS. Yes.

MR. McCUMBER. There is but one attitude for the Commission to take. The Commission is here to investigate the subject and it has got to investigate it and make some kind of a report. It is incumbent upon those who are interested, either for or against the project, to assist the Commission all they can in presenting to it the facts on which they are compelled under the treaty and under the questions that are submitted to them to formulate and present to their respective governments an answer.

MR. BACKUS. Well, Senator, I think the investigation that was made up to 1916 was made with their own engineering staff without consulting any one. At any rate, that is my understanding.

MR. POWELL. Mr. Backus, at a later period than that power was given to us as a Commission to investigate the St. Lawrence River for purposes of navigation and power and we had employed, or rather the Government nominated or employed engineers that went into the matter, the engineers working along parallel lines. Another thing—looking at the particular language of this notice I think we are a little off our base. This says:

The Governments of the United States and Canada on February 27, 1925, referred to the International Joint Commission, for investigation and report with conclusions and recommendations, the following questions.

They did not refer to us the examination of any plans whatever; it was the broad, general principle they submitted as follows:

Question 1. In order to secure the most advantageous use of the waters of Rainy Lake and of the boundary waters flowing into and from Rainy Lake, for domestic and sanitary purposes, for navigation purposes, for fishing purposes, and for power, irrigation and reclamation purposes; and in order to secure the most advantageous use of the shores and harbors of both Rainy Lake and the boundary waters flowing into and from the lake, is it, from an economic standpoint, now practicable and desirable, having regard for all or any of the interests affected thereby, or under what conditions will it become thus practicable and desirable—

(a) To regulate the level of Rainy Lake in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,108.61 sea level datum?

(b) To regulate the level of Namakan lake and the waters controlled by the dams at Kettle Falls in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,120.11 sea level datum?

(c) To provide storage facilities upon all or any of the boundary waters above Namakan Lake?

Now, I take it that we have to investigate this whole question and they say they will supplement our efforts by appointing the necessary engineers and we take their engineers and point out what we want. I do not think it is your duty at all. Where there is a matter in which you are asking the Commission to endorse some scheme that you are laying before them, you would submit your plans and those plans would be approved at Ottawa and receive the sanction of the engineers of the United States and then the question is whether we would grant the application or not. But there is no application here. This requests the Commission to find out what is the best thing for this section of the country.

Mr. CLARK. May I interrupt you for a moment? It is true that there is no application, but there is a pretty definite statement as to what is desired by your company in the way of storage, Mr. Backus, and it is so definite that you indicate the points at which the storage facilities could be located. While it is true that is not an application under our rules, yet there is a pretty definite statement of what you would think is the right thing to be done. My suggestion was only to the question, if you think that is the right thing to be done and those are the right points, have you any definite plans to suggest to the Commission in regard to that particular thing?

Mr. POWELL. I agree that Mr. Backus did not submit plans. He has had the thing in hand. He is the proper party I should think to suggest plans. But those plans are prepared in the way of development of the evolution of the question before us.

Mr. McCLEARN. But if the Commission please, speaking for some of those who see no necessity for anything of the kind and who are not desirous of seeing storage basins put in, how are any of these to know what evidence to bring before the Commission? We are even more in the dark than the Commission. Following out the reading of the reference and the notice, we are just taking hold of something here that we cannot tell where it will lead. The matter starts out with the supposition that there is some necessity, that some application has been filed, that some specifications had been made and this Commission is to inquire into the advisability of going ahead with that matter.

Mr. POWELL. Not going ahead with those suggestions at all.

Mr. McCLEARN. Excuse me, Mr. Powell, for a moment. The suggestion made by yourself is that it is necessary for the Commission to make an investigation and report under the order of reference.

Mr. CLARK. I think if you will read this reference it will be perfectly plain to you. I gather from what you state and what others have said that you think raising the level would be injurious. That is true, is it not?

Mr. McCLEARN. Yes.

Mr. CLARK. The first thing that we are called upon to answer is, is it practicable and desirable to regulate the level of Rainy lake in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1108.61 sea level datum? You are prepared to make statements in regard to that, are you not?

Mr. McCLEARN. As to Rainy lake?

Mr. CLARK. Yes.

Mr. McCLEARN. To make statements, but we have assumed, or at least I did, that the procedure in this instance would be the same as in the Lake of the Woods hearing.

Mr. CLARK. No. Here is the question submitted to the Commission: "Will it become practicable and desirable to regulate the level of Rainy lake in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,108.61 sea level datum?"

If I have understood anything from the remarks that have been made, your contention is that it would not be advisable or desirable to permit the upper limit of the ordinary range of the levels to exceed the elevation mentioned?

Mr. McCLEARN. Yes; but we do not confine our objections, of course, Mr. Chairman, to Rainy lake.

Mr. CLARK. No. The next paragraph reads: "Is it practicable and desirable to regulate the level of Namakan lake and the waters controlled by the dams at Kettle falls in such a manner as to permit the upper limit of the ordinary range of the levels to exceed elevation 1,120.11 sea-level datum?"

Now, I understand that you think that would be inadvisable?

Mr. McCLEARN. Yes.

Mr. CLARK. Are you not prepared to present some reasons why you think it would not be advisable?

Mr. McCLEARN. Yes, but let me ask the chairman this question. If Mr. Backus representing the interests that have set this inquiry in motion is unable to state to the Commission what effect these dams would have on the contours of the lake shores after investigation for five years, how could the property or resort owners or the general public be able to present to this Commission their testimony at this time or at any time until they had before them plans and specifications and engineers' reports on the water levels and contours?

Mr. CLARK. Then do I understand you to say you do not care to make any statements in regard to matters connected with the raising of the water levels?

Mr. McCLEARN. I do not intend to say that to your honors. I did say, in making my appearance here this morning and in answer to

a suggestion of Commissioner Magrath, that it seemed to us not feasible or practicable to take the time of the Commission in entering objections and giving testimony until we knew what the effect was. For instance, Mr. Backus made the statement that we are all alarmed and frightened by something that is not going to happen. He tells us that in all seriousness. He tells us: We propose to put in these dams and reservoirs on this chain of lakes, but we are not going to hurt anybody. How do we know?

Mr. CLARK. Supposing we dismiss Mr. Backus from the discussion entirely.

Mr. McCLEARN. Then you can dismiss all the rest of us aside from his interests.

Mr. CLARK. No, I beg your pardon. You cannot do so because the two governments have asked this Commission to say whether the raising of the level of these waters is practicable or not. We would like all the assistance we can get on that point.

Mr. McCLEARN. We will give you all the assistance we possibly can.

Mr. CLARK. Just a moment. If you can give us any assistance we would be glad to have it, irrespective of what Mr. Backus may have said or irrespective of what he may do in the future. His matters will be dealt with when they come before the Commission.

Mr. McCLEARN. I see your point.

Mr. CLARK. If you think it will be detrimental to the best interests of everybody concerned, the interests of navigation, the interests of everything, to have the level raised, we would like to have your views on that, and why it would be detrimental. That is just a personal statement from me and not speaking for the Commission.

Mr. McCUMBER. Let us supplement what the chairman has said by this statement. Mr. Backus, after studying the situation, has presented to this Commission what he claims to be a feasible and practicable plan of raising the waters in these several lakes a certain number of feet. He says that will not hurt anybody materially. He admits he does not fully understand in every case just what the damage may be. Supposing you take that as a basis, the figures which he has given of the raise in the different lakes. Can you not tell us just what it would flood, what damage would be done, or do you want to wait until the Government engineers have ascertained all of these contours and levels?

Mr. McCLEARN. Well, Senator McCumber, I am not speaking for all of the gentlemen who are representing other interests. I am speaking for myself only. I have read the notice carefully several times and I think I understand its general purport and effect. But it did seem to me, even before the Commission began its sitting, and it does now seem to me that until we know fairly

definitely what the evidence of the interests proposing these changes is, we cannot prepare our case. For instance, I do not know now even after listening to the statements that have been made both by Mr. Backus and by members of the Commission whether you desire to hear testimony from witnesses who live at different places along the chain of lakes here or whether you want technical information from engineers who would go ahead and investigate matters as to what the effect of raising these waters would be on the surrounding country, or whether you merely want statements, not in the nature of testimony, but designed to be helpful to the Commission. I am sure I and, I think, the other gentlemen representing interests that would be affected, would like to know what the pleasure of the Commission is, whether it wants us to bring in witnesses, to get engineering opinion or whether it wants merely statements of those interested.

Mr. McCUMBER. Naturally the testimony of a witness would be of very little value unless the witness knew what would be flooded and what the effect would be. If you have not that information, if your investigation so far has not been such that you can give us that information, it would seem at this time useless to present any testimony along that line.

Mr. McCLEARN. That has been our opinion too. Laying that aside, how can we help you?

Mr. McCUMBER. I would say this. Mr. Backus has made a certain suggestion. He has stated from his knowledge of the facts that raising the level of this lake a certain number of feet will injure no one; that raising the level of another lake a certain number of feet, all of which he has given, will effect only a very nominal damage upon certain timber and possibly certain islands. That testimony is before us. Of course it is undisputed at the present time. It is not verified by the engineers except as he gets his information mostly from engineers. If you can answer those and show that he is mistaken in his suggestions, we shall be glad to hear what you have to say. But if you have not the information, I would agree with you I would not waste time in merely guessing at it.

Mr. McCLEARN. But we are in the position, Senator, of the attorney who comes into court without his opponent having filed a complaint or his being advised of what allegations he is going to be called upon to meet until he gets in there.

Mr. CLARK. Just lose sight of the question as to whether you have any opponents or not.

Mr. POWELL. The countries wish to be informed.

Mr. CLARK. Just lose sight of the question whether anybody is your opponent and fix your mind on this fact, that the governments have asked this Commission whether it would be proper and reason-

able to change the level as heretofore fixed of certain waters. Supposing that is the thing that we say and you come here this morning and say: We think it is not best to have the levels changed. That is your position is it not? Give us what information you can as to what causes that belief in your mind, why it is you think the levels ought not to be changed, why it is you think it is not reasonable and right that the old levels should be departed from. I am sure you stated this morning it would drown out a lot of islands and do a great deal of damage.

Mr. McCLEARN. We can give you a very considerable amount of that.

Mr. CLARK. Give us all you can.

Mr. McCLEARN. But before presenting that we would like to know whether or not there will be other witnesses here giving engineering data. I understand Mr. Thomas is going to make some statement.

Mr. THOMAS. Yes.

Sir WILLIAM HEARST. I would be glad if Mr. Backus would be good enough to give me some additional information. Might I be permitted to say that as I understand this question, the duty is cast upon this Commission of making certain investigations and making a report, and if Mr. Backus to-day said he withdrew all he had said and he had no desire to press for any works or any difference in levels, our duty would remain the same to go on and investigate no matter what Mr. Backus said and we would have to make a report. So I think we ought to get that situation clear. It is not a question of what Mr. Backus urges or suggests other than that he may give us information and assist us in arriving at the report we may make.

Mr. ELMQUIST. It has been correctly stated, of course, that it is the duty of the Commission to make recommendations to their respective governments. That duty is imposed upon you by the reference, and you cannot very well discharge that duty without a complete fulfilment of that duty, but it is a very large commitment. Obviously, those interested in changing the water levels brought about the reference which you are here having under consideration. It is not the vast number of people who are satisfied with the water levels that brought this question before your honorable body; it is those who desire the changes; with all due deference to the statement that has been made by Mr. Backus, it is not sufficiently complete to enable this Commission to make any recommendations to the respective governments that the water levels should be changed, because his statements are not supported by engineering data showing the amount of land that will be flooded, the damages to each piece and parcel of land, the manner in which the improvement should be made and how the regulation should be carried out. You

are in the dark. We are in the dark. Until that information is developed in a proper way, it would seem to me it is simply a waste of time for people to give their evidence because they may have to go over the ground again when a complete plan is presented. Mr. Backus has very courteously admitted that if this Commission desires him to go ahead and make his surveys and present full and scientific data, he is willing to do that, although attached to that is the implied suggestion that the Commission ought to indicate whether or not it favors such a plan. Of course that cannot be done. It occurs to me then that since it appears so far that Mr. Backus and his interests are the only ones who desire a development of these water resources, the Commission should call upon him for a complete presentation. When that is done, then the other parties will be very glad to present such testimony as they may have to offer either for or against that plan.

Mr. McCUMBER. Let us assume that Mr. Backus has given all he intends to give and, maybe, all he can give. We cannot stop in our investigation. The question is whether or not those who are opposed want to submit any evidence at this time. We do not force anyone to come in and testify if he thinks the time is not ripe or if he has not sufficient information. But if he has, on any of the subjects suggested by the chairman, we see no reason why he cannot come forward and express the objections, if there are objections, to raising these levels, just the same as Mr. Backus has given his testimony which is only a drop in the bucket of what we must secure and has spoken in favor of raising the levels. I think it is immaterial who first presents his side of the case. For my part, let Mr. Thomas come on and say what he has to say. If there are no other witnesses on that side in favor of raising the levels, then let us take the other side and present such testimony as you may see fit to present.

Mr. ELMQUIST. Is it not true that in the ordinary course of this investigation very complete surveys will have to be made?

Mr. McCUMBER. Before we pass final judgment, certainly.

Mr. POWELL. And I am sure I may say the engineers have been appointed by the respective governments for that purpose and they have received partial instructions from us and they have been working on the case.

Mr. ELMQUIST. And all their studies will be made available to the public?

Mr. POWELL. If this were an ordinary case in the courts and I were the judge, I would non-suit Mr. Backus for no other reason than this, that he has not shown any reason why this undertaking should go ahead, not for his own account but how these changes should be made so as to further all industrial development.

Mr. ELMQUIST. Admitting that surveys must be made and testimony presented in support of those surveys, will any of the parties here or anyone interested in this question forego any right to present hereafter any testimony, if they choose to do so at a later time than now?

Mr. POWELL. So far as I am concerned I can only say what we do. We heard testimony over and over again almost in the St. Lawrence case after the reports were in and we had reports from several other engineers before us, and also in the Lake of the Woods case; but particularly the most elaborate plans were prepared by Mr. Cooper's firm, the most eminent hydraulic firm, probably, in the continent of America, and by two or three individual company engineers, and the Ontario commission submitted an elaborate report with plans. We had all those before us, and from the many we selected one. You can put forward yours; Mr. Backus can put forward his and anybody else who wants to can put forward his. Then we decide.

Mr. McCUMBER. There is another matter you ought to take into consideration. It is a very big program to consider all this territory and every little island and bay there is in all that range of country. There are certain matters you have in mind where the flooding will be injurious, where it will drown out certain islands. If you will at this time give us your testimony, it might direct the attention of the engineers who are going to do this work to the principal points of objection, so that they might give more time to that and possibly less time to other matters, because even with all the engineers we can put into this case for some time we can not cover every little indentation and gully. It is too big a question. If we knew what the principal objections were, what the principal points were, that would assist the Commission and the engineers in getting at the facts that we ought to have before us. That is one of the reasons why we would like to hear from you if you have any testimony that you yourself feel is reliable.

Mr. POWELL. Injury to tourist traffic is one thing, and another important matter which has not been mentioned before is injury to fish by raising the level and the possible destruction of the breeding grounds. There are many things you can go into; but if you do not go into them now, I think I can say on behalf of the Commission, we will allow you to go into it later, because we do not want to hurry things up.

Mr. McCLEARN. As regards the men who are here, we can make a division for convenience into four sets of parties.

Mr. POWELL. Four interests?

Mr. McCLEARN. Yes. The State of Minnesota is represented here and counsel for the state says that he represents the Auditor of the

state who is custodian of its lands and timber. He represents the Forestry department, the Fish and Game department. All of those departments are interested in this matter. As suggested by Mr. Powell, there are many of those fishery questions, forestry questions, recreational questions that the state is interested in. They have some of their men here who, no doubt, could make statements. Mr. Elmquist, on the other hand, represents a number of the larger lumber companies that are interested in timber around these lakes and in the floating of the logs on the lakes to where they go to market. There are other attorneys who represent riparian owners, men who own shore line, and resort owners. There are a number of men here representing the Izaak Walton League whose activities are no doubt familiar to the Commission.

Then there is this community interest, that is, all of these communities that are adjacent to this 120 miles of international shore line. Without exaggeration, there are literally thousands of people who are interested because of the outing facilities of these lakes, their scenic beauty, their accessibility, their climatic conditions especially in the summer months. I think it no exaggeration to state that to that group, to that interest, this particular section of the international boundary is to the whole of the United States in the summer time what California and Florida are to the United States in the winter time. It is just as much of an asset to northern Minnesota as is any part of southern California or Florida.

Mr. POWELL. Supposing some one, yourself or another, takes one section and work it out, and let us adjourn and hear you at a subsequent time.

Mr. McCLEARN. That is what I am coming to. We desire that very much. In fact, representing this section which has to do with the tourist traffic, with the community interest, with the preservation of this section of the country for its recreational value, we would naturally and logically come last. We probably have the laboring oar. It may be more difficult to adduce testimony, evidence documentary or otherwise, that would have convincing force and effect and value than would be the case as regards either of the others that I have enumerated. Nevertheless we are prepared, as I believe, to submit a considerable amount of evidence bearing upon that particular point. But obviously until we know or have reason to believe that this, that or the other part of that stretch of 120 miles is going to be devastated or inundated by the raising of these waters, which no layman can determine in advance of engineering data as to where the contours would be after the level had been raised, while I do not know that the other gentlemen representing these other interests have the same difficulty or regard this question from the same angle, certainly those having in mind the recreational value of this

particular section would not want to call witnesses from all parts of the area to be affected until they know how far they were affected.

Mr. POWELL. They could give evidence, for instance, what an increase of four feet in the level of the lake would mean.

Mr. McCLEARN. No doubt about that.

Mr. POWELL. They could give the general character of the woods or forests.

Mr. McCLEARN. We could submit all of that evidence, but we can not follow it out to its logical conclusion until we know what the contours are.

Mr. MAGRATH. I suppose it is a question of balancing all the advantages against the disadvantages. I suppose if we had evidence that the cost of the development of these reservoirs was greater than the benefits that would be derived from them, we would not carry on any further investigation. Mr. Backus has submitted certain evidence to us. I do not know what value it has, but I suppose he is prepared to say that the evidence his statements are based upon will be available for our engineers. Is that right?

Mr. BACKUS. Certainly.

Mr. MAGRATH. Then Mr. Backus stated that he felt that fifty per cent of the cost should be borne by the governments. Assuming that the cost was one hundred per cent payable by the power interests, assuming that your estimates Mr. Backus, are fairly correct, would the benefits that will be derived justify the expenditure?

Mr. BACKUS. Is that a question?

Mr. MAGRATH. Yes. If you do not care to answer—

Mr. BACKUS. I will answer it instantly. Certainly.

Mr. CLARK. Supposing you had to pay it all yourself?

Mr. BACKUS. Of course it is justified.

(Mr. McClearn asked that the previous question be read over by the reporter:)

Mr. Magrath. Then Mr. Backus stated that he felt that fifty per cent of the cost should be borne by the governments. Assuming that the cost was one hundred per cent payable by the power interests, assuming that your estimates Mr. Backus, are fairly correct, would the benefits that will be derived justify the expenditure?

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Mr. Clark. Supposing you had to pay it all yourself?

Mr. Backus. Of course it is justified.

Mr. BACKUS. No, not altogether.

Mr. CLARK. Supposing it were all assessed against the power interests?

Mr. BACKUS. I would say it was justified.

Mr. McCUMBER. From the public interest or the power interest?

Mr. BACKUS. Both.

Sir WILLIAM HEARST. You would not consider it justified if only your power interests were in question?

Mr. BACKUS. No, I would not.

Mr. MAGRATH. Or the power interests that are in existence today. Have you in mind the potential power developments on this system?

Mr. BACKUS. Yes.

Mr. MAGRATH. But not knowing when they will all be developed?

Mr. BACKUS. Yes, that is true, but when they are developed they will get the benefit.

Mr. MAGRATH. But would the existing power interests be justified in meeting the whole expenditure?

Mr. BACKUS. Well, that is doubtful.

Sir WILLIAM HEARST. The object of course of the works that you suggest is to create more power?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. You have suggested, I think, in your memorandum—I could not follow it entirely—the increased power that these works would give all along the chain of waters that they would serve right out to Lake Winnipeg, I suppose?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. Have you formed any idea of the total power that could be developed on all these waters with the improvements; have you made any estimate of that in horse power?

Mr. BACKUS. Yes, sir. I cannot give you the figures right now.

Sir WILLIAM HEARST. But you have made an estimate and you can give us that?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. Have you made any study of the market for that power, or rather when a market might reasonably be expected for power if it were all developed?

Mr. BACKUS. Yes. As to all the power available in Minnesota, that can all be utilized immediately, but as regards the power on the lower Winnipeg river, I have not made a study of that.

Sir WILLIAM HEARST. But you have in mind that the undeveloped power sites, if I might so express it, should pay the portion of the cost assessed against them?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. On what basis could we decide upon any recommendation as to that at the present time without knowledge as to when they might be developed, when there might be a market, when these power sites might be utilized. How can we form in advance any idea of the assessment with reference to them?

Mr. BACKUS. It occurs to me that it would be a very logical thing for your Commission to do to suggest that when leases are granted or when development occurs, those power sites take up their portion of the expense. Perhaps you do not gather that clearly. We will say we have a lease in White Dog rapids, 50,000 horse power. When we take up that lease we find that there is a tax on that power site that has accumulated, we will say, to \$25,000 in this manner. Having the knowledge that they have that protection, I think anybody would be willing to pay anything that has accumulated on it up to that time.

Sir WILLIAM HEARST. That is, you mean to say that the undeveloped power site should be assessed on the same basis as the developed power site?

Mr. BACKUS. Yes, I do.

Sir WILLIAM HEARST. Although you might not develop the power on the White Dog rapids for twenty-five years and you would not, therefore, during that period get the benefit of those storage dams and when you did develop them you would have to pay the cost for the twenty-five-year period accruing while you did not develop them.

Mr. BACKUS. Yes. Of course I am not saying that it will be twenty-five years, or even five years, but even after twenty-five years to make it a dependable flow of water would be worth spending a lot of money on. It might be that the government would want to suggest a sinking fund to take care of those that did not come in within a certain time and then assess it to them later.

Sir WILLIAM HEARST. Do you not think it is likely that the governments might say that these waters and the use they can be put to belong to the country, and the people who get the water should pay rental or otherwise rather than the countries themselves.

Mr. BACKUS. Yes, that is true.

Sir WILLIAM HEARST. The dams that you propose to construct or some of them at all events according to your recommendation would be both power and conservation dams?

Mr. BACKUS. Well I would answer the question yes and no. Any cost beyond what would be necessary for storage beyond what would be necessary if there was nothing but a control dam there, would have to be paid by the company developing.

Mr. POWELL. That is the increased cost?

Mr. BACKUS. Yes. In other words, just to give you this illustration, we will say that we have figured on the dams for Lac LaCroix at \$196,000 odd. That is on the basis that you have nothing but control dams. Now, we will say that one of these dams is estimated at \$150,000. A power company comes in and says: We do not want to build the dam there; we want to build it where we will get a

higher head. All right. The people controlling the flowage will say: We have a figure on this dam of \$150,000. We will let you have the \$150,000. You can go and spend a million dollars somewhere else.

Sir WILLIAM HEARST. But in our report we cannot speculate on what may happen. We must go on some definite basis and I want to have this clearly in mind. In your recommendations you are recommending to the Commission a plan that should be adopted. Have you in mind dams that will serve as storage and power dams, or only as storage dams?

Mr. BACKUS. Storage dams and power dams wherever power is possible.

Sir WILLIAM HEARST. And your suggestion is that any increased cost in the construction of these dams over what would have been necessary for the construction of storage dams would be charged to power?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. You would also assess the power that might be developed at these dams with a portion of the conservation dams as well?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. You spoke about certain applications in 1920 to the Interior Department. Was anything consummated there, or does it rest simply in the shape of an application?

Mr. BACKUS. That is the present status.

Mr. MAGRATH. Mr. Backus, have you any opinion to offer in respect to the value of water for power purposes per million cubic feet?

Mr. BACKUS. No; it depends entirely on what the total head developed is.

Mr. MAGRATH. You have made suggestions here for the creation of reservoirs for a certain cubic capacity. What can a power afford to pay for those reservoirs?

Mr. BACKUS. I have forgotten just what the exact figure down to a cent is. I think it figures out that the storage on the upper waters is \$5.75 per horsepower. That is so much less than the development cost that it would not need any consideration at all. Even if that got up to five times that amount you would say it was very cheap, because no power can be developed for \$25 or \$30 or \$40 or \$50 per horsepower.

Mr. POWELL. Quebec Province rents it for less than half of that to-day.

Sir WILLIAM HEARST. Not developed power.

Mr. BACKUS. This is developed power. Mr. Magrath is probably more familiar than I am, or will be before long, at any rate, when

he gets into the Hydro work, with the value of power development. Whenever you can develop power for \$100 per horsepower capital charge you are on pretty safe ground. Of course, you will find isolated cases where it can be developed for around \$50 or \$60 or \$75. When you ask the question what power is worth we do not approach it in any of these cases, and, therefore, when you ask if the power can stand it if the government is going to consider anything, there is only one answer.

Mr. MAGRATH. Based upon your estimates?

Mr. BACKUS. Yes, sir.

Mr. MAGRATH. Well, if your estimates were doubled?

Mr. BACKUS. The same answer. I presume the Commission has had before it those Quebec powers. I have given you roughly the information we got, and if you will make an analysis you will find that the average in the Province of Quebec and this situation is all in favor of our situation out here.

Mr. MAGRATH. What is really passing in my mind is this: When we were at this problem before some question was raised about the damage to the Canadian National Railways crossing Rainy lake. There was a wide divergence of opinion among the engineers as to the damage that would be incurred. Mr. Meyer, if I remember rightly, had the idea that that damage amounted to only fifty or sixty thousand dollars. You will correct me if I am wrong.

Mr. BACKUS. I think that is right.

Mr. MAGRATH. And I assume that is the amount that you have taken into account in the estimate you presented.

Mr. BACKUS. Yes, sir.

Mr. MAGRATH. Our Commission employed a very well known engineer, an engineer internationally known, and my recollection is that his estimate was between two and three hundred thousand dollars. Now, those were prices that existed some years ago and the work cannot be done, I suppose, for less than at least a fifty per cent increase now. The question in my mind is as to whether the value that you will obtain from this reservoir here, taking into account these frontages on both sides of the river that have to be protected; whether we are justified in going into very heavy expenditures in making contours around here.

Mr. BACKUS. Of course, I do not know. I did not give the railroad part of it any consideration after Mr. Meyer passed on it, but I assume that the engineer you speak of who placed a valuation at so much higher a point figured on making improvements in raising the grade in the low lands, which, if I remember correctly, Mr. Meyer said the railroad company would have to do before very long anyway. I may be wrong about that, but just what the surrounding conditions are in regard to the railroad I shall not undertake to make any

statement about. I have not had any occasion to look into that and it would be folly for me to try to pass judgment on it.

Mr. OPSAHL. Mr. Chairman, in order to clear up some glaring statements of doubt, I wish to reiterate my request of this morning for permission from your Commission to make a definite survey at lower Basswood falls for a dam for power as well as storage purposes. That would mean the level would be between 55 and 57 feet. These men know that situation very well.

Mr. CLARK. I can only say that that matter will be taken under consideration and submitted with other matters of that character to the engineers of the Commission who will doubtless cover the point.

Mr. OPSAHL. The point is that in section 11, township 65, range 11, or what is known as Picture Rock, there is a practical location for a dam and a storage dam on Crooked lake to be so established as to fit in with the storage dam on Basswood lake at this particular point. The storage dam on Crooked lake would not interfere with the power dam at Lower Basswood falls in section 11; one would fit in with the other. Whether you would want that in a written application or not, I do not know.

Mr. CLARK. No; I am sure that when the engineers come to make their investigation on that particular point you will have abundant opportunity to consult with them and give them such information as you have. I think that is as far as we can go at the present time.

Mr. WILKIE. In order that there may be no misunderstanding, our attitude is precisely that which Commissioner Magrath has set out. We are nobody's antagonist; we are here to place facts before you, and we come in under the economic side of it. It would facilitate my work, and may I add also I think yours, if we could get from Mr. Backus, either through his engineers in the morning or some time soon, an estimate of what the real value of this water stored would be, the commercial value that is. It appeals to me from the standpoint of economics.

Mr. CLARK. Perhaps you could get that by consultation with Mr. Backus.

Mr. WILKIE. I notice that he did not present it in any form upon which you could put your finger this morning, but instead of commenting on it I would rather deal with it.

Mr. CLARK. It has been suggested by Senator McCumber that if at our next convening it will be possible for the various interests present that are interested in these waters and lands to get together and select from their number one or two to submit the views of the remainder, it might expedite matters. Of course, there is no desire on the part

of the Commission to cut off anybody who wants to be heard, but perhaps by consolidating efforts it will economize time.

Mr. McCUMBER. I would suggest that each interest select some man to present its case.

Mr. POWELL. I think it would be well to adjourn this meeting until we get a report from our own engineers.

Mr. CLARK. We may not have any report from our engineers. It may be that matters will so develop that the engineers' report will not be necessary.

Mr. POWELL. The governments appointed those engineers for us, and it is fair to assume that they can render some aid and will do so.

Mr. CLARK. I think we could get some information now and perhaps other information later. I do not feel like cutting off any gentlemen at the present time if they have anything of value to present to the Commission. However, I do not want to be insistent on their making any statements.

Mr. WILKIE. If the Commission desires to adjourn, I have no great objection, but we are here at very considerable expense and we have been laboring hard as far as the railway company is concerned.

Mr. CLARK. I do not think the disposition of the Commission is to adjourn, at least until tomorrow morning.

Mr. MAGRATH. Are you ready to go ahead with your testimony, Mr. Wilkie?

Mr. WILKIE. There is just a little more information we could get and I could then give you all the information we have upon the subject. Then perhaps you may want us to get more. I would prefer to present now what information I have rather than be compelled to bring my witnesses back again.

Mr. ELMQUIST. Can you indicate how much time would be required to put in your case?

Mr. WILKIE. I should think a couple of days. There is considerable work.

Mr. McCLEARN. If the Commission please, there may be necessity for those on the American side meeting with those on the Canadian side to arrange about the order in which matters shall be presented. For instance, there are here on the American side a number of settlers that cannot well remain away from home more than a day or two. There are others whose official positions prevent them from being away for more than a day or two. If we should go ahead it might be that we would desire to ask you to defer, Mr. Wilkie, until we get through in order to accommodate those men.

Mr. WILKIE. I would be very glad to consult the convenience of everybody.

Mr. CLARK. Then, you gentlemen can settle that matter of time between yourselves.

Mr. WILKIE. We will try to do so, Mr. Chairman.

Mr. McCLEARN. We might give the individual property owners an opportunity this evening to testify and let them go.

(Thereupon, at 5 o'clock p. m., the Commission took a recess until 8 o'clock p. m.)

EVENING SESSION

Mr. CLARK. Gentlemen, the hour of eight o'clock having arrived, you will come to order. Are any of the gentlemen ready to proceed? If so, we shall be glad to listen to them.

STATEMENT OF MR. R. N. CHAFFEE

Mr. CHAFFEE. May it please the Commission, I was appointed chairman of the Lake Levels Committee of the Arrowhead Association, and as such and as a private citizen I wish to say a few words.

First, as chairman of the committee I want to present a few resolutions that have been turned over to me. I desire to present first a resolution by the Federated Trade Assembly of Duluth; second, one by the United Spanish War Veterans of Duluth; third, one by the Cook Commercial Club of Cook, Minn.; and a letter from Edward Alford Merritt, 236 Huntington Avenue, Boston, Mass.; also a resolution by the Lions Club of Duluth, signed by various members.

(The communications above referred to in opposition to raising the water levels will be found in the files of the Commission.)

Mr. CHAFFEE. Gentlemen, I am an attorney at law of Duluth. I have been living there and practicing law for the past sixteen or seventeen years. About ten years ago, during the year 1916, I purchased some property on Crane lake. Crane lake is, as you all know, one of the lakes which is affected by the dam at Kettle falls.

I have measured the rise and fall of Crane lake, and as nearly as I can measure it, from the high water level that the dam has raised it, to the low water level to which it has lowered it, is approximately upwards of twelve feet.

Immediately in front of my cabin, which is on lot 2 in section 24, township 67, range 17, there is a sand point like the sand point which is formed at Duluth by the meeting of the St. Louis river and the waves of Lake Superior. This sand point under normal conditions is at practically all times out of water. It is formed in the same way. This sand point this summer at one or two different times was covered by water upwards of three feet. At one time last summer or the year before that there was not sufficient water to

run a boat alongside that sand point and I would say there are ten feet at that place.

Now, the question has arisen whether the raising of the waters of Lac LaCroix would be a detriment to Minnesota at large or the country tributary to these lakes.

First, I want to emphasize the fact that conditions have materially changed within the last two or three years. Conditions have been changing in the last five years, but the most rapid change has been made in the last two years, mainly by the reason that such good roads come in at Crane lake. The roads are especially good at Ely and the roads are especially good coming in at Ray. At Ray Kabetogama can be reached, and Crane lake and Basswood lake and the lakes at the eastern end can be easily reached at Ely.

I want to call your attention to the change in the number of people who have come to Ely and have taken out canoes in the last few years. In 1921 there were 183, in 1922, 267; in 1923, 371; in 1924, 485; and in 1925 up to this date 748.

Of the number coming in 1925, 265 came from Minnesota, 47 are miscellaneous, 314 came from Illinois, 32 from Indiana, 13 from Ohio, 17 from Iowa, 18 from Nebraska, 16 from Missouri, 12 from Kansas, 2 from Texas, 10 from Michigan and 2 from Oklahoma.

So we see that this country south and west of here is pretty well represented. This is just one particular bunch of people that are coming in. I have been chairman on this committee about a month. It was about a month ago that we got the information down there as to what was going on, and we formed this committee. An examination has been going on and this situation represents fairly accurately the conditions existing at Crane lake, and from that point at Ray and at other points where they can get into these lakes.

Some one said this afternoon in speaking about Lac LaCroix that while it has beautiful scenery only 100 people could see it. Well, Lac LaCroix, I believe, is one of the most beautiful lakes in the country. People have been here from Missouri and everywhere else, and they all are of the same opinion, that it is one of the most beautiful lakes in the United States. It is the ultimate destination of the people coming in through Ely. That is one of the places to which they mean to go. Lac LaCroix is filled with islands. I was there last spring and I had one of the most wonderful fishing trips I ever had. You can look down for thirty feet and the water is as clear as crystal. It is perfect for fishing.

If Lac LaCroix is raised fifteen feet, in my opinion it will be spoiled absolutely for recreational purposes and absolutely ruined for canoeists. I would never want to go there again if that were done. We should all take some kind of recreation. The number of

people over the United States each year who desire to go there is doubling and trebling. The main thing is to have beautiful camping spots. The next thing is to have fish.

These other gentlemen will speak of the spoiling of the fishing grounds, but I want to talk about the damage that it will do from purely a recreational standpoint. Those islands will be absolutely spoiled as such for that use. It cannot be otherwise, if the water is raised fifteen feet. The old saying is, what goes up has to come down. I think there is no question, gentlemen, but that these lakes that are raised fifteen feet will certainly be lowered fifteen feet. You can imagine what it will be in front of my cabin when that lake is lowered. I am speaking from experience. It has been raised way above normal level. I have had one or two parties cutting down dead trees for me to get rid of the unsightly effect. Where this water has been raised a great number of Norway pines have been killed and many trees of all kinds have been killed. These places are unsightly, especially when the water goes down low. Where there are inlets or where the shore slopes back it is nothing but a mass of mud or dead trees, and from the standpoint of one going in there as a canoeist for a vacation such a country does not interest him.

We have just outside of Duluth a lake known as Island lake. Anyone in Duluth knows about the conditions in that lake. Years ago when I first came to Duluth I used to go out there. I had a canoe that I put on the rear of my car and used to go fishing on that lake. Under no circumstances would I want to go out there now. It is being used by a power company and is absolutely spoiled. Anybody going out there can see the conditions. It is a disreputable looking place. And that is exactly what is going to be done with all these lakes along the border line if they raise the water to the level referred to.

Another thing. I feel that one of the most important parts of a thing like this is not only the raising but the lowering of the water. There may be a commission that will look after this matter, but can they look after it adequately? For instance, Crane lake or Sand Point lake where this was especially noticed was lowered a foot in a very short time and there was spawn all along the rocks there that was killed by reason of the lake going down so quickly.

Just one more thing and I shall be through. There is another thing that is going to happen. The State of Minnesota on Lac LaCroix and the federal government are inviting people to take leases there and build cabins. That is a wonderful place in which to do that. I do not know of any other place that will compare with it. Well, who wants to build a cabin along the side of a lake

that is going to have fifteen feet of mud in front of it? They have put their boathouses way up above that, and how is that going to be a place that they will ever want to go to?

There is one thing I forgot and that is the raising of Crane lake a half foot or a foot more. I built my boathouse away above where I thought the water would affect it, and when I was up there in July the underpinning was washed out in front and the boathouse was tipping into the lake. What will another foot do? That is only a minor detail, but I want to emphasize this fact, that the evidence, if it may be termed such, that I am putting in here tonight is only half that I would like to put in, and I am not prepared to put in any evidence because I do not know exactly what the contour lines will be, I do not know exactly what the effect will be, but I can say offhand that if it is put up another foot it will do irreparable damage.

Sir WILLIAM HEARST. Mr. Chaffee, you said that at Crane lake the variation in levels has been about twelve feet since the dam was put in?

Mr. CHAFFEE. Yes.

Sir WILLIAM HEARST. You mean the dam at Kettle falls?

Mr. CHAFFEE. Yes, sir.

Sir WILLIAM HEARST. Can you tell me what the variation was before the dam was put in?

Mr. CHAFFEE. I do not think I am in a position to do that at this time. That can be supplied here by another man, I think.

Sir WILLIAM HEARST. All right.

Mr. McCUMBER. What effect would the raising of the water fifteen feet in this lake have upon the islands? How many of them would be submerged entirely and what would the proportion be of the others? Can you give us any idea as to that?

Mr. CHAFFEE. I would not undertake to say how many islands there are there, but some of them would be wholly submerged, others would be half submerged, and possibly some of them three-quarters submerged. Some are fairly high above the water level and they might not be affected as much as others, but it would raise the water sufficiently, I would say, to spoil them for any such purposes.

Mr. McCUMBER. About how many islands are there in that lake? What is the name of it?

Mr. CHAFFEE. Lac LaCroix.

Mr. McCUMBER. How many islands are there in that lake?

Mr. CHAFFEE. I do not know the exact number.

Mr. McCUMBER. Nobody knows the exact number, but give me some idea of the number.

Mr. McCLEARN. About eight hundred.

Mr. McCUMBER. What is the size of the lake?

Mr. CHAFFEE. It is about thirty-six miles long.

Mr. McCUMBER. How wide is it?

Mr. CHAFFEE. It varies from ten to twelve miles to five or six miles.

Mr. McCUMBER. That is near enough. I understand, of course, that it is very irregular.

Mr. McCLEARN. As I understand, your position is that the water in that lake has been raised twelve feet.

Mr. CHAFFEE. No; not in Lac LaCroix.

Mr. McCLEARN. It is proposed to raise it seventeen feet.

Mr. McCUMBER. If you raise it seventeen feet what proportion of the islands would be entirely submerged?

Mr. McCLEARN. Senator, by that question do you mean the islands with timber on them or just the land and the rocks?

Mr. McCUMBER. I would say the land. If there is timber that sticks above there that is not the island itself, but do you know about the topography of those islands and how high the average stand is above the surface of the water and about what proportion of them would be entirely submerged, as far as ground and rocks are concerned?

Mr. CHAFFEE. I have gone through the lakes, and it would seem to me that if the lake was raised from sixteen to seventeen feet that the best part of all the islands would be submerged; that is, the islands themselves. I have not seen all the islands; I was in there only once this spring, and I made these observations, and from my observations I would say that most of the islands would be submerged. At any rate, they would be spoiled for use for camping purposes. I do not think any one would want to go there.

Mr. DUBOIS. Would this seventeen feet raise kill all the trees, practically?

Mr. CHAFFEE. Well, I would say it would kill all of them on the islands. I would say that it would kill the majority of them, at any rate.

Mr. McCLEARN. It would kill them all in time, would it not?

Mr. CHAFFEE. Any that were in water would be killed. That is the effect that it has had on Crane lake. If they raise the water and maintain it long enough it kills the trees absolutely.

Mr. DUBOIS. The water has that effect at any place, but would it be high enough to kill trees on these islands?

Mr. CHAFFEE. On some of the islands it would cover them absolutely and on others I would say that from a half to three-quarters of the islands would be covered with water, and whenever they are covered with water certainly the trees would be killed.

Mr. McCUMBER. Is there much timber on those islands?

Mr. CHAFFEE. Yes; on some of them there is Norway and white pine.

Mr. McCUMBER. To any great extent?

Mr. CHAFFEE. I am not a timberman, but the camping place we had was in beautiful Norway and white pine.

Mr. McCUMBER. That was on one of the islands?

Mr. CHAFFEE. That was on one of the islands.

Mr. POWELL. Have you ever been at Lake of the Thousand Islands on the St. Lawrence?

Mr. CHAFFEE. No; I never have.

Mr. POWELL. They have something analogous to a freshet there on the average between the highest level of the river in the spring and the lowest level in the summer time of somewhere about three or four feet. That rise and fall fails to deter the people from going there by thousands and thousands. It is one of the most fashionable summer resorts on the continent. Have you ever been on the coast of Maine?

Mr. CHAFFEE. No.

Mr. POWELL. There exists a different condition. That is salt water, but the coast line is dented with fjords like the coast of Norway. So much is that the case that between the International lake at New Brunswick and down below Bar Harbor I think there may be fifty or two hundred miles as the crow flies—the coast line is three thousand miles—and that place is simply deluged with people from all over the United States, and the rise and fall of the tide there is over sixteen feet.

Mr. CHAFFEE. May I suggest that at the Thousand Islands the water when it raises does not stay up long enough to kill the trees. It is just the natural high water of the spring, is it not?

Mr. POWELL. Oh, that remains there quite a time.

Mr. CHAFFEE. For two or three months?

Mr. POWELL. Yes. The vegetation below the marginal line is dead anyway, but I am speaking about the driving out of summer visitors.

Mr. OBERHOLTZER. May I make a possible explanation? It seems to me the cases you cite are totally different from those that we are trying to show here in this region. You are speaking of regions which have had this fluctuation since time immemorial and they have always been subject to this high water and, therefore, have had no vegetation below the high water mark. Therefore they have had no scenery destroyed which appeals to the public, but these lakes in question are having an artificial level applied to them which raises the water above the natural vegetation and there are trees growing there which will be destroyed in large numbers which

totally destroys the beauty of the lake and consequently its utility for recreation purposes.

Mr. POWELL. What you say is practically true since time immemorial, but there is a new era commenced with the action of the City of Chicago in purloining an immense quantity of water of Lake Michigan through the drainage canal which has lowered the whole level of the St. Lawrence nearly a foot. At the city of Montreal it has lowered it to such an extent that it interferes with navigation.

Mr. OBERHOLTZER. Of course, that has been in favor of the vegetation.

Mr. POWELL. No; it would produce a kind of a coarse water grass where there is soil.

Mr. OBERHOLTZER. But it has been the opposite of inundating any trees.

Mr. POWELL. It never got that high.

Mr. BACKUS. Mr. Chairman, may I ask Mr. Chaffee a question?

Mr. CLARK. Certainly.

Mr. BACKUS. I just came in, Mr. Chaffee, when I heard you say that the fluctuations on Crane lake were very violent and sudden. Just explain those fluctuations, please, and what you mean by violent.

Mr. CHAFFEE. I mean that the water goes down very much faster than it would——

Mr. BACKUS. How fast?

Mr. CHAFFEE. I would estimate about a foot, and I would not know exactly the time; in ten days or something like that.

Mr. BACKUS. A foot in ten days?

Mr. CHAFFEE. Yes.

Mr. BACKUS. For how long a period?

Mr. CHAFFEE. Well, from over a month to six weeks, possibly two months.

Mr. BACKUS. This lasts for a period of six weeks or two months?

Mr. CHAFFEE. No; it does not continue going down as fast. I think probably it has not gone down since the middle of July over two feet.

Mr. BACKUS. What I want to get before this Commission is what you call violent fluctuation of Crane lake, because whatever the fluctuation is at Crane lake is the fluctuation of the entire Namakan chain of lakes.

Mr. CHAFFEE. Well, I would say that a decidedly unnatural situation would be when the water would range from a high level to a low level of about 12 feet; maybe more than that.

Mr. BACKUS. I understand, but how violent is it?

Mr. CHAFFEE. I would say where it was drawn off a foot in about ten days—it may have been less time than that—but I would say a foot in about ten days.

Mr. BACKUS. A foot in ten days or less?

Mr. CHAFFEE. Yes; something like that and then a continuation of that. I know that in about a month's time the water receded a considerable amount, from four to five feet.

Mr. BACKUS. In a month's time from four to five feet?

Mr. CHAFFEE. Something like that.

STATEMENT BY MR. HUGH J. McCLEARN

Mr. McCLEARN. It has been evidenced several times during the day that the Commission desire to get information from different places which they have to deal with. On behalf of the Arrowhead Association of Minnesota which takes in a number of the counties of northeastern Minnesota, I want to invite this Commission to go to the different lakes and see for themselves what these men are trying to describe. If the Commission will indicate at what time it would take the time, we will see that every facility is afforded for your comfort and pleasure and, we hope, education, on this trip. I merely make that remark at this time that to my knowledge we would like you to see at first hand the lakes and rivers, the wonderful wild natural beauty of this chain of lakes. I have not traveled perhaps as extensively as some members of the Commission and many others who are here, but I have been over most of the United States, and I venture the assertion that nobody who will take the time to make the trip to see those rivers and lakes at any time from the middle of June to the middle of October will have any hesitancy in pronouncing that it is the finest natural beauty spot there is anywhere in the United States. I do not include Canada, because you have wonderful rivers and lakes to the north, some of which I have been on; but we have not anywhere else in the United States any such wild natural beauty that is to be found in this stretch of 120 miles.

Mr. POWELL. The head of the Lake of the Woods is a magnificent region. If I owned one of the islands there I would not want it overflowed.

Mr. McCLEARN. If you were to put a canoe into these lakes up here, for instance in Basswood lake which is this side of North Lake, and come down to where we are now, you would never want to go anywhere else for a summer outing and you would forego many of the places you had seen in other summers. I want to be conservative; I do not want to overstate or overestimate, because I

hope that you gentlemen will find time to make that trip to see that wonderful land. It may probably not be worth mentioning, but I have lived in Minnesota for twenty-five years and I have never wanted to leave this northern section during the summer or fall, because I do not believe there is any place equal to it that I could go to. With the permission of the Commission I want to file a letter from the president of this association which outlines his knowledge of the matter and his regret at not being here at this time.

MINNESOTA ARROWHEAD ASSOCIATION—AN ORGANIZATION PLEDGED TO PROMOTE THE WELFARE AND DEVELOP THE NATURAL RESOURCES OF THE COMMUNITY IT REPRESENTS

OFFICE OF THE PRESIDENT,
Duluth, Minnesota, September 26, 1925.

To the Honorable INTERNATIONAL JOINT COMMISSION.

GENTLEMEN: This Association, representing a body of citizens and civic organizations of Minnesota, is intensely interested in the conservation of the Minnesota Arrowhead country, as a great natural playground for the American people.

In considering what changes, if any, are to be recommended in the levels of the lakes, along the international boundary, we desire to be heard if any changes are proposed which would permanently alter the conditions or which would result in frequent fluctuations of the shore line.

Such fluctuation as may interfere with breeding grounds and food supplies for fish and game, and which would therefore tend to destroy the game and fish, would be hurtful to the interests for which this association stands.

Indeed, any changes that would impair the beauty of these lakes and streams would not only encounter the opposition of aroused public opinion, but offend the conscience of all lovers of the great outdoors, whether in this country or Canada. You will recognize, I am sure, the good sportsmanship of our people and their desire to preserve what the Almighty has so generously given us.

In another aspect, Minnesota is becoming a great resort country—soon to equal the importance of California or Florida as winter resorts. The tourist trade and summer travel is one of northern Minnesota's most valuable assets, and its future depends on keeping and protecting what we have.

Anything that impairs the beauty of our north country destroys one of the most valuable things in the state.

It is true that the petitioner and the Governments of the United States and of Canada are financially able to construct these dams, pay for the timber destroyed and land taken for flowage purposes. But, there is no money that can repay the American people for the desolation of these beautiful shores; there are no repairs that can compensate the destruction of breeding grounds for fish and game. There is no financial profit to any person or group that ought to stand for an instant in the light of the health of millions of people and the nation's enjoyment of what God has given.

Respectfully submitted,

JAMES H. HARPER, *President.*

Mr. McCLEARN. Mr. W. D. Washburn is our state representative. He lives in Minneapolis. He has been a member of the House of Representatives of Minnesota for many years. He is a land owner here in the northern section and he specializes in summer resort and lake shore property. I would like him to tell the Commission what he cares to tell it about this particular part of the country.

STATEMENT OF MR. W. D. WASHBURN

Mr. WASHBURN. I have been a member of the State Legislature for a good many years and have followed pretty closely on the lines of a real estate man, so I am pretty well acquainted with the state lands. I have also been in the iron business and have been in the wood business for twenty years, so I have a very general idea of conditions here. I thought it might probably interest you to advance some general opinions and to give a description in regard to these lakes. If as Mr. Backus has said, it is not going to damage our citizens whom we are supposed to represent in the legislature and is going to be beneficial to the state, then any objection to it falls to the ground. We want every enterprise possible to come to the state even if it is for the benefit of private people. But as representing people in the legislature and as citizens we want to safeguard the interests of our own people and if, as Mr. Backus says, none of these people are going to be injured, as far as I am concerned and the legislature and government, we would be glad to have any large enterprise come in here.

As regards the state lands, the state still owns five or six hundred thousand acres of state lands. Up in this portion of the country we had a very large amount of lake front. Some four years ago the land men were picking up lake fronts so rapidly, and they were disappearing so fast, we felt in the legislature the ordinary people ought to have an opportunity somewhere to go on our lakes. Therefore four years ago the government took all the lake front from sale and last year we passed a law by which we cannot sell any lake front. The state lands are worth about \$20,000,000. That depends largely on the conditions, but the enormous number of people coming in here are making the lake fronts one of our greatest assets. It was stated this afternoon that the improved property was the more important; but if you will take this trip you will find that the lake fronts constitute one of the largest assets we have in this state.

Mr. CLARK. How do you get them into public occupation?

Mr. WASHBURN. We do not want them all grabbed up by the land people. We simply lease them by the year. We have not the idea of leasing them now so much, so that future generations will get on the lakes. The lake fronts have disappeared so rapidly that within

one hundred miles of Minneapolis it is almost impossible for anybody to get on the lakes. Hundreds of thousands come up here, and they feel we should protect them and keep the lands for some time so that ordinary people can get onto the lakes.

Mr. McCUMBER. You say you lease for one year?

Mr. WASHBURN. We have divided these lots, I think, into 50 or 100 foot lots. We do not give any title to them at all. Some twenty years ago we reserved all the millwood on all the state lands, so that now the lake fronts are reserved themselves and the minerals on them as well.

Mr. McCUMBER. The lessee must build on the leased land?

Mr. WASHBURN. He pays \$12 or \$15 for the lease and is supposed to build on it.

Mr. McCUMBER. With the privilege of the state to lease for the next year?

Mr. WASHBURN. No; but I think the lease runs until it is canceled.

Mr. McCUMBER. Is it a lease from year to year or for one year or merely the rental to be paid yearly?

Mr. WASHBURN. It is a lease from year to year, but the state does not want to deprive anybody of their pleasure at the lakes, and I do not suppose they will cancel them.

Sir WILLIAM HEARST. It is to keep absolute control in the state?

Mr. WASHBURN. Not only that, but the minerals underneath them, and we thought it best to take them off the market, which we did four years ago when we found the lake fronts being taken up so rapidly. This was done largely in connection with the lakes you are dealing with. In the lakes you will visit you will find mile after mile of state land. If you will permit me to do so, I might give you a little detailed information as to the connection with some of these different lakes and the effect the raise in the waters will probably have on them. We owned some 10,000 acres in Lake county and we have since sold them. I went up there four years ago to look at them. I took a trip about fifty miles from Basswood lake clear up into the south side of Knife lake. We had about thirty or forty lakes there and I looked over them. This is the condition of those lakes. The shore as a general thing, except where you get some abrupt granite cliffs, runs generally from three, four, five, or six feet, but that gives no idea how much water is to be flooded back. It is very inaccessible country. There are no contours except under the government survey, and until somebody makes the contours neither Mr. Backus nor anybody else can tell what damage is to be done there. There is not a road or a school or a settler anywhere up there except people who are living on these lakes. At this time we

did not anticipate Basswood lake would be flooded, but you will find the lakes run from three to four feet, sometimes five or six feet below the banks and I understand there are nearly a hundred islands in Basswood lake. The average island is about three, four or five feet above the surface.

Mr. CLARK. Does the surface gradually rise?

Mr. WASHBURN. Yes, these are granite islands. It is just the granite piled up. These islands are very beautiful. The timber is not merchantable but it is generally small birch and spruce and Norway.

Mr. CLARK. You speak of four or five feet. That is at the water edge. As you go in them, what about the height of the water there?

Mr. WASHBURN. The shores are very irregular. You go along for miles and there will be a granite ledge that will run back with a very slow ascent and then you get a knife cliff and there are great cliffs eighty or ninety feet high. What makes it impossible to tell what will happen to these lands is that back of that nobody knows what the contours are. Where it is low, the water may run over and cover whole townships. It is essential if this Commission is to get at the facts some preliminary surveys should be made. The country can be approached only by a canoe.

Mr. CLARK. There is going to be a survey.

Mr. WASHBURN. Only the woodsmen and settlers that have gone up there are occupying those lakes. We feel this way about the tourists. They have gone up there in good faith. This year we have had 600,000 tourists in the state and they have brought in \$100,000,000 which is three times our wheat crop. It is worth just as much as the wheat crop and the corn crop together and it will be continually increasing. In these northern counties the timber is very largely cut and they have made all their improvements on the basis of a very high assessment of timber. They are coming to the point where, if they do not get iron, it will be almost impossible to run the counties at all. In Lake county there are no resources except timber, and that has all been cut. They are relying now largely on the network of lakes. They owe us \$800,000. Thirty per cent of their taxes are delinquent and twenty per cent, I think, are delinquent in the state.

Mr. CLARK. You need more tourists.

Mr. WASHBURN. Of course if you hold forth on the tourist proposition, it seems rather spectacular.

Mr. CLARK. I know something about it.

Mr. WASHBURN. The fact is that these lake fronts double and treble every year. When I looked at them first, there was no particular sale for them. They are now selling from \$10 to \$15 an

acre. When the timber in these northern counties is all cut, if they can get the assessed value of the lake front on the tax law, and the towns can get the business that comes here every summer, it will help the people every summer, because these counties are not in very nice shape. There are counties in which all the pine has been cut. They are lively and progressive people. They have built fine schools and roads and the legislature is anxious to conserve every resource they have so that they can carry on their county governments. Of course this does not affect any particular interest at present except what you call the iron value of these mines. The Vermilion range starts at Tower where these big mines are but the range runs clear through the northern half of every one of these counties, what they call the Ely greenstone and Sudan formation which is at present in the iron mines near Lake Superior. That underlies our region and we feel that when our iron there is exhausted, we will get resources here, and some attention should be paid, as regards the flooding of these lands, to the probable mineral value of them. I was not prepared to make a speech to-night at all, but I have my report in Minneapolis on every one of our lake fronts and just about where they are located and what the effect of the raise in the water would be. Of course this is what undoubtedly happens in these fresh water lakes where there is no tide. As soon as the water is maintained three or four feet above the ordinary level, in the course of a few years the timber is all dead. You can see that in any part of the state. If this proposition is carried out some provision should be made whereby settlers can be compensated.

In closing, I would say that neither this state, nor the representatives of this state, nor anyone I know objects to any enterprise of this character whatever if we feel our people are protected and no damage is done to them, and if damage is done they should get some compensation. I do not think anybody here has any sentiment against either Mr. Backus or his company. The people representing the legislature here only want to protect our people. If no damage is going to be done, no man wants to prevent any enterprise from coming here. We want developments made here. If these dams are to be constructed here and we are to get cheap electric power, of course every citizen in the state wants that, but we feel that as regards that vast country up there which is practically unknown and where no contours have been run, the Commission should have some sort of an examination made to see exactly what these dams are going to do.

Mr. CLARK. I may say, for your information and mine, that these contours will be run. I have had some knowledge from reading only, of the tremendous revenue that Minnesota has had from

her iron mines in years past. I would like to ask you this question. You speak of those granite islands. Do you find the iron underlying the granite?

Mr. WASHBURN. No; granite and iron never occur together. When you get on to the granite, you are off the iron.

Mr. CLARK. That is what I thought. As regards these granite islands, it would not have any effect on your iron deposits?

Mr. WASHBURN. No.

Mr. CLARK. Where do you find the iron deposits?

Mr. WASHBURN. They are found south, not north of the granite. In this particular region, the Ely Greenstone, which was one of the original formations, runs in a broad belt anywhere from eight to ten miles wide. It is known as the Sudan formation or Jasper. When that protrudes, you get those splendid mines. There is no reason why you should not get as good mines in this part of the country but it is so utterly inaccessible and it would cost so much to develop them that nothing as yet has been done. But anyone who knows the iron business always has that in mind. They are of no value at present, but if large numbers of them are flooded, you will not be able to get the iron out at all.

Mr. CLARK. In disposing of the land did you reserve the iron?

Mr. WASHBURN. Prior to 1905 we reserved iron in only about five or six of the counties. In 1905 we passed a general law and now we reserve the iron in every county in the state.

Mr. CLARK. Did you reserve the other minerals also?

Mr. WASHBURN. We reserve iron and phosphates which is supposed to cover practically everything. We reserve gold and silver and phosphates.

Mr. CLARK. Do you reserve oil?

Mr. WASHBURN. No. This has never been regarded as an oil-bearing formation. I forget just what the bill covers although I helped to pass the bill myself, but it was supposed to be very sweeping to cover all the metallic minerals. At that time the oil craze had not started and we did not know anything about it.

Mr. POWELL. Has your federal government disposed of all the lands it owned in the state?

Mr. WASHBURN. Practically all. As regards the federal lands, most of the iron lands were sold thirty years ago, long before we thought we had iron at all. They were sold for state funds. The most valuable mines were abandoned for ten years. They did not pay the taxes on them. They were sold by government patents prior to that time and to-day, except in the rocky country up here, in the granite, there are practically no homestead lands that anybody wants at all. They have been picked up completely.

Mr. POWELL. How much iron land did the state get from the government?

Mr. WASHBURN. We got sections 16 and 36. Where we did not get those sections we got lieu sections so that it turns out in all sorts and conditions.

Mr. POWELL. Were the only grants you got school land grants?

Mr. WASHBURN. We got school land, university and swamp. They go into the school fund which now amounts to \$20,000,000 a year.

Mr. POWELL. Your grant of sections 16 and 36 is a school land grant?

Mr. WASHBURN. Yes.

Mr. POWELL. How many hundred thousand acres aside from that did you get?

Mr. WASHBURN. I do not think the universities got over twenty or twenty-five thousand acres, but it all goes into the school fund, and the university gets its share of it.

Mr. CLARK. How much land belonging to the state was granted by the federal government?

Mr. WASHBURN. All the land we have was granted by the federal government. We have no other land.

Mr. CLARK. But that was not granted to the state?

Mr. WASHBURN. I think so, yes. It was granted.

Mr. CLARK. Public lands are not granted to the state except by special enactment; they are granted to the original settlers.

Mr. WASHBURN. When our constitution was adopted it provided we should get sections 16 and 36, and, of course, there had been all sorts of schemes run in connection with lands here, and in many cases we could not get sections 16 and 36. Some of them had been disposed of to private interests previously, and in lieu of those we got other sections.

Mr. CLARK. I understand that. It has been the custom of the federal government in granting lands to territories or states as they emerge from the territorial status, in addition to the school land of section 16 or 16 and 36, as the case may be, to grant other lands.

Mr. WASHBURN. Undoubtedly.

Mr. CLARK. Can you tell me how many thousands or hundreds of thousands of acres were granted by the federal government to the State of Minnesota aside from sections 16 and 36?

Mr. WASHBURN. I could not. They were granted mostly as swamp land grants. I do not know exactly under what law they gave us lands, but we added those to our two school sections, and they all go into the school fund just the same.

Mr. McCLEARN. I will try to get that for you. I know what you have in mind. We can get it from our statute or blue books.

Mr. WASHBURN. We keep them in one general list, and unless you hunt them up and take them away from the school sections it is hard to tell.

Mr. CLARK. Not at all; because they come in general grants from the federal government. You can probably get it in the enabling act which Congress passed for the state.

Mr. BACKUS. You want this Commission to understand that the 600,000 tourists, whose money you talk about all come from the Arrowhead district?

Mr. WASHBURN. Not at all, but they are coming up here very rapidly. Probably three-quarters of them come up from Rainy river.

Mr. BACKUS. How many actual residences or cottages would you say were built along the boundary waters above Crane lake?

Mr. WASHBURN. I never counted them.

Mr. BACKUS. You also do not want the Commission to understand that the lake area is going to be diminished if the lakes are enlarged, do you?

Mr. WASHBURN. I was not talking about extending the lakes. I was talking about protecting the lake fronts on the present lakes.

Mr. BACKUS. If the area is enlarged there will be still more land for the tourists?

Mr. WASHBURN. There will be a swamp.

Mr. BACKUS. It will flood out the swamp and get the dry land, will it not?

Mr. McCUMBER. If I understand you correctly, until the surveys have been completed, you are not able to give us any idea of what amount of timber will be injured by the raising of the water levels on these lakes.

Mr. WASHBURN. No. That would be impossible, but if a given lake front runs from three to five or six feet and you raise the water eight feet, it will naturally be under water. Until you run the lines, I do not believe anybody can guess what damage, if any, will be done.

Mr. McCUMBER. You do not know whether there will be a raise of eight feet, or whether these timber lands or the great bulk of them are above the eight feet at the present level?

Mr. WASHBURN. It depends upon which lake you mean.

Mr. McCUMBER. You have some of them in view. You have been talking about some.

Mr. WASHBURN. The lands we were thinking about when we passed that law were the very lands on the south side of Kabetogama and Namakan lakes. I know about the average contour of Basswood lake. I spent seven days there. I do not think, of all those hundred

islands, with that raise of eight feet there will be twenty of them above water. If that timber is not merchantable timber, lots of them sell as saw logs and it increases the value of the property more than if they had plain timber on them. Those islands sell at from \$35 to \$50 an acre.

Sir WILLIAM HEARST. I understand your statement, Mr. Washburn, to be that you had no objection and you knew of no objection to the proposed improvement so long as all parties who might suffer damage thereby should be duly compensated?

Mr. WASHBURN. I did not mean to put it that way. I think the damages would be so great, if it is going to include overflowing of a vast amount of land, that the governments could not pay the damages. We want some place to which our people can go.

Sir WILLIAM HEARST. Your idea is, then, that the damage would be such that it would not be a subject of money compensation at all?

Mr. WASHBURN. I think if we are trying to represent our state at all we ought to keep our lakes. If you people will go up there I think you will find it one of the most beautiful regions you have seen.

Mr. McCLEARN. Call Mr. Handberg.

TESTIMONY OF JOHN G. HANDBERG

(John G. Handberg was called as a witness, and testified as follows:)

Mr. McCLEARN. Where do you live, Mr. Handberg?

Mr. HANDBERG. At Crane lake, Minnesota.

Mr. McCLEARN. What is your business?

Mr. HANDBERG. I am in the merchandising business there.

Mr. McCLEARN. Before going into the merchandising business what business or occupation did you have?

Mr. HANDBERG. I was a ranger in the United States Forest Service from the fall of 1909 until two years ago.

Mr. McCLEARN. Will you sketch briefly the duties of a United States forest ranger?

Mr. HANDBERG. It is controlling the forests. The forests are divided into districts and there is a ranger in charge of each district.

Mr. McCLEARN. What district did you have charge of?

Mr. HANDBERG. In the last ten years I had charge of the Sioux river district in south of Lac LaCroix.

Mr. McCLEARN. That is south of Lac LaCroix?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. During the time you were United States forest ranger did you travel this lake region here under discussion?

Mr. HANDBERG. Yes, sir; I traveled it, and when I got to points where I could overlook the border I controlled it and fought fire in it during all that time.

Mr. McCLEARN. Does the United States forest department have lookout stations?

Mr. HANDBERG. Yes; they have one in south of Loon lake, Cascade lookout.

Mr. McCLEARN. Will you describe briefly this chain of lakes as to its shore line, its timber, islands, outlets, etc.

Mr. HANDBERG. Little Vermilion, of course, has been logged and burned over and is coming up in reproduction of poplar and jack pine and birch. Loon lake has also been logged. Lac LaCroix remains in its natural state.

Mr. McCLEARN. Tell us something in particular about Lac LaCroix, its contours and islands and shore lines, etc.

Mr. HANDBERG. It has a wonderful network of peninsulas and islands. The timber is not merchantable; it is stunted timber, but it adds very much to the beauty of the lake. As to the value, the majority of the timber is not really merchantable timber. That is right close to the shore line. In from the lake shore there is some valuable timber and there is some on the lake shore, but a small percentage of it only is merchantable.

Mr. McCLEARN. What is the fact with reference to the islands being timbered?

Mr. HANDBERG. Well, they are all covered with timber and there is very shallow soil on these islands. They are rocky islands.

Mr. McCLEARN. There is evidence in the record here that it is proposed, if permission be given, to raise the waters of Lac LaCroix some seventeen feet. What would you say would be the effect of such raising of that water on the islands?

Mr. HANDBERG. It would flood the islands and back the water into the lakes.

Mr. McCLEARN. What would be, in your judgment, the effect of the raising of the water on the lake with respect to the timber on these islands?

Mr. HANDBERG. It would destroy whatever timber is flooded.

Mr. McCLEARN. Would or would not a seventeen foot rise in the water submerge most of those islands?

Mr. HANDBERG. It would submerge most of them, yes, sir.

Mr. McCLEARN. And the peninsulas?

Mr. HANDBERG. Yes, sir. While some of these shores are higher than seventeen feet, there is a large percentage that are lower than seventeen feet.

Mr. McCLEARN. What about these bays and coves and cottage sites along the shore? What would be the effect of the raise on those?

Mr. HANDBERG. There are considerable cottage sites that would not be bluffs which would naturally be flooded.

Mr. McCLEARN. You think they would be destroyed?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. What can you tell the Commission with reference to your situation there on Crane lake?

Mr. HANDBERG. Crane lake this summer has been very high, and although I was not down to the Kettle falls dam I have been told that the water was within a foot and a half of the top of the dam. If it were any higher than the present water of this summer, I would have to move out.

Mr. McCLEARN. Why?

Mr. HANDBERG. It would flood me out.

Mr. McCLEARN. Just what part of Crane lake do you live on?

Mr. HANDBERG. I live on the south shore, lots 5 and 6 of section 25.

Mr. McCLEARN. Do you know where William G. Randolph lives there?

Mr. HANDBERG. He lives west of me.

Mr. McCLEARN. How far west of you does he live?

Mr. HANDBERG. About half a mile.

Mr. McCLEARN. Does he run a summer resort at that place?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. Do you know where Kneebone Smith lives on Crane lake?

Mr. HANDBERG. He lives east of me.

Mr. McCLEARN. You are in between the property of Kneebone Smith and that of William G. Randolph?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. And you are all three on the south shore of Crane lake?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. Were you there at the time the dam was put in at Kettle falls?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. What has been the effect of that dam on the water of Crane lake and its tributaries, etc.?

Mr. HANDBERG. It has flooded considerable land all along that country.

Mr. McCLEARN. What is the effect of lowering and raising this dam there on the shores of Crane lake?

Mr. HANDBERG. There is dead timber all along the lake shore there.

Mr. McCLEARN. Has it killed the timber?

Mr. HANDBERG. Yes, sir; stumps are standing all along the lake shore there.

Mr. McCLEARN. Has that been going on for some years?

Mr. HANDBERG. Yes, sir.

Mr. McCLEARN. Have you been on these other lakes that would be affected by the dams suggested in the communication of Mr. Backus to the Commission?

Mr. HANDBERG. I have been through Basswood lake. That was twelve years ago.

Mr. McCLEARN. Can you tell us, then, without going into detail, the recreational value of that chain of lakes or anything about how it is used or by whom it is used?

Mr. HANDBERG. I have occasion to meet people who make canoe trips up there. I sent some up there this summer. They all came back and are sending their friends up there, so I think they surely must enjoy those trips, otherwise they would not express themselves the way they do.

Mr. McCLEARN. Can you give the Commission any idea of the scenic beauty of this chain of lakes, commencing with Namakan lake and going east?

Mr. HANDBERG. Of course, Namakan has been more or less damaged in the past by logging and so has Vermilion lake and Loon river, but when you get up into Lac LaCroix and Crooked lake and Basswood lake you have the natural state of that country. It would not be improved very much by flooding it.

Mr. McCLEARN. Are you familiar with Kabetogama lake, Mr. Handberg?

Mr. HANDBERG. I am not, no, sir.

Mr. McCLEARN. Then I will reserve that for another witness. I think that is all the questions I would like to ask.

Mr. BACKUS. I would like to ask Mr. Handberg a question or two.

Mr. Handberg, how many cottages are there on Lac LaCroix?

Mr. HANDBERG. Well, there are no cottages on Lac LaCroix. I believe there are a couple down at the portage there.

Mr. BACKUS. Does anybody live around there at all?

Mr. HANDBERG. No.

Mr. BACKUS. What is the nearest town?

Mr. HANDBERG. Tower would be the nearest south.

Mr. BACKUS. How far is that?

Mr. HANDBERG. About twenty miles.

Mr. BACKUS. There is a good road to that town?

Mr. HANDBERG. Well, around about there.

Mr. BACKUS. How many miles around and about?

Mr. HANDBERG. About ninety miles.

Mr. BACKUS. There is a good road for ninety miles to get twenty miles?

Mr. HANDBERG. Yes, sir.

Mr. BACKUS. How many bootleggers are there on Lac LaCroix?

Mr. HANDBERG. I do not know anything about the bootleggers. I do not mix with them.

Mr. BACKUS. At the present time there is no compensation to be paid people for moving their cottages on the islands or on the shores of Lac LaCroix?

Mr. HANDBERG. No, no indeed.

Mr. BACKUS. If the lake is extended in area the cottage site would be just as good if removed back a little further, would it not?

Mr. HANDBERG. I cannot say that they would be improved any.

Mr. BACKUS. You would have higher ground?

Mr. HANDBERG. You would, but you would have dead timber.

Mr. BACKUS. Suppose the dead timber were removed.

Mr. HANDBERG. Well, do you expect me to remove it?

Mr. BACKUS. I am merely saying, suppose it were removed.

Mr. HANDBERG. Take Loon lake, the lake you have not mentioned. By raising Lac LaCroix seventeen feet you would raise Loon lake thirty-five feet, and you would have a big flood south of Loon lake and have to remove the dead timber.

Mr. BACKUS. How much difference is there between the level of Loon lake and that of Lac LaCroix?

Mr. HANDBERG. I do not know that.

Mr. BACKUS. Is most of the timber removed from Loon lake?

Mr. HANDBERG. The merchantable timber has been logged on the American side. Still there is a forest cover there.

Mr. BACKUS. There is not very much merchantable timber there?

Mr. HANDBERG. Not merchantable timber.

Mr. BACKUS. There is no merchantable timber except that owned by the companies that I represent.

Mr. HANDBERG. Not necessarily your company. The United States Government has timber in there.

Mr. BACKUS. Merchantable timber?

Mr. HANDBERG. Not necessarily merchantable timber but forest timber.

Mr. BACKUS. You were speaking about Crane lake. You said the vegetation and forest were killed there. Was not that all old cutting of Crane lake before the lake was raised?

Mr. HANDBERG. No, sir; you can go right out there today and see the stumps standing.

Mr. BACKUS. Whose timber was damaged?

Mr. HANDBERG. I am not in a position to tell you about timber.

Mr. BACKUS. Is it not a fact that before that dam was built most of the merchantable timber was cut away from Crane lake?

Mr. HANDBERG. Most of the timber has been removed since the dam was built.

Mr. BACKUS. I mean was not most of the timber around Crane lake removed before the dam was built?

Mr. HANDBERG. No; there had been no logging there; not any more than that big island there in the lake. On the shores there had not been any timber removed.

Mr. BACKUS. Was there any merchantable timber killed by the dam?

Mr. HANDBERG. I would not say that there was any great amount of merchantable timber killed.

Mr. McCLEARN. It killed what timber there was, whether it was merchantable or not?

Mr. HANDBERG. Yes.

Mr. McCLEARN. Some reference was made in the question of Mr. Backus as to the number of people on Lac LaCroix, that is, settlers on the shores or islands. What can you say with reference to the number of people who use the lake by means of canoes and pleasure boats?

Mr. HANDBERG. They come in both ways there. There must be over a hundred people coming down there in the summer.

Mr. BACKUS. Would such a canoe trip be injured any by having the water raised?

Mr. HANDBERG. It would not improve it any?

Mr. BACKUS. It would not take out any of the rapids?

Mr. HANDBERG. Well, I would just as soon bump up against a few rapids as your dams.

Mr. BACKUS. Are there not places where you would have to portage your canoe a mile or two or three, where if the dams were built you could run your canoe right up to the dam and slide it over and go into the water below?

Mr. HANDBERG. I would just as soon portage up those rapids as through your dam. If your dam is low you would be going up a slew.

Mr. McCLEARN. Call up Mr. William G. Randolph.

TESTIMONY OF WILLIAM G. RANDOLPH

(William G. Randolph was called as a witness and testified as follows:)

Mr. McCLEARN. Mr. Randolph, where do you live?

Mr. RANDOLPH. Crane lake.

Mr. McCLEARN. How long have you lived there?

Mr. RANDOLPH. Five years.

Mr. McCLEARN. How long have you lived in this immediate vicinity?

Mr. RANDOLPH. Since 1894.

Mr. McCLEARN. You have been here, then, something over thirty years?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. Mr. Randolph, are you familiar with the lakes and rivers tributary to Rainy lake and up as far as Basswood lake?

Mr. RANDOLPH. Not as far as Basswood, but as far as the eastern end of Lac LaCroix.

Mr. McCLEARN. At the present time you are running a summer resort on Crane lake?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. That lake has arms and straits and peninsulas and rapids, etc.?

Mr. RANDOLPH. Yes, sir. Only at times are there rapids there.

Mr. McCLEARN. Were you familiar with Namakan, Kabetogama, Crane, Sand Point and those other lakes before the dam went in at Kettle falls?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. I wish you would tell the Commission, Mr. Randolph, in a general way, about Kabetogama lake. Reference has been made to it and I would like you to describe it so the Commission can visualize it.

Mr. RANDOLPH. Kabetogama is a lake with a good deal of grass on it. There is a good deal of marshy bays and considerable low land there. It has been drowned out since the dam went in there. It is a beautiful lake. It is a duck marsh.

Mr. McCLEARN. Kabetogama is an Indian word meaning parallel lake?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. Parallel with what?

Mr. RANDOLPH. It runs parallel with Rainy lake. The Indians gave it that name.

Mr. McCLEARN. Mr. Randolph, in what way, if any, is it connected with Namakan and Crane lakes?

Mr. RANDOLPH. It is connected through a series of narrows. It connects with Namakan lake, then Namakan connects with Sand Point and then another narrows connects Crane lake. Under normal conditions it is all navigable.

Mr. McCLEARN. Are the conditions sometimes not normal?

Mr. RANDOLPH. Yes; they are sometimes not normal, due to drawing the water off to an abnormal extent.

Mr. McCLEARN. You mean at the dam at Kettle falls?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. What effect has that had on the timber and shore line of Sand Point and Crane lakes and Kabetogama lake, Mr. Randolph?

Mr. RANDOLPH. Well, it has submerged a good many trees there. I can submit pictures showing definitely the damage that has been done. I have not them in my possession just at present, but I can submit them to the Commission if it is desired. They are pictures taken this summer showing pine trees in two feet of water. They are dead at the present time.

Mr. CLARK. Was it within your knowledge when they were in the water?

Mr. RANDOLPH. Yes, sir.

Mr. McCLEARN. Where were these pictures taken? In what lake?

Mr. RANDOLPH. They were taken in Crane lake this summer.

Mr. McCLEARN. What about Kabetogama lake? What has been the effect of the increase of water there?

Mr. RANDOLPH. There is more submerged land.

Mr. McCLEARN. Kabetogama lies to the south and is lower than either Sand Point, Crane or Namakan?

Mr. RANDOLPH. Yes.

Mr. McCLEARN. When you leave Crane lake going east what is the connection to the east between Crane lake and Lac LaCroix?

Mr. RANDOLPH. You get into a little lake they call Little Vermilion and then Loon river.

Mr. McCLEARN. I wish you would state to the Commission just what the physical conditions are at Loon river and Little Vermilion lake. Is there any change in the level of the lakes at that place?

Mr. RANDOLPH. No; the dam affected it up as far as Loon river portage. That is below Loon lake. The portage there is 900 feet long.

Mr. McCLEARN. Why is the portage necessary at that place?

Mr. RANDOLPH. Well, there are falls there.

Mr. McCLEARN. Natural falls?

Mr. RANDOLPH. Loon lake empties over a rocky ledge there.

Mr. McCLEARN. Describe that to the Commission.

Mr. RANDOLPH. That is all there is to it.

Mr. McCLEARN. How wide are those falls, for instance?

Mr. RANDOLPH. It depends on the height of the water, of course.

Mr. McCLEARN. Well, under ordinary conditions.

Mr. RANDOLPH. There is not very much water excepting in the spring freshet coming over those falls.

Mr. McCLEARN. How high are they?

Mr. RANDOLPH. I think they are estimated to be thirty-five feet, although I do not know exactly.

Mr. McCLEARN. In the statement made by Mr. Backus to the Commission it is contemplated that a dam be put in at that place. Can you tell the Commission anything about the effect of the dam there?

Mr. RANDOLPH. There have been engineers up there this summer taking levels and they were supposed to put in a dam eighty-two feet high and also a power plant there at that point. That is, the mouth of the Loon river.

Mr. McCLEARN. It is the western outlet of Lac LaCroix, is it not?

Mr. RANDOLPH. It is away below Lac LaCroix. It is a western outlet, though.

Mr. McCLEARN. What would be the effect, in your opinion, of putting in a dam eighty-two feet high there?

Mr. RANDOLPH. That would mean that it would drown out the pine trees even. It would go over the top of them. There is a rise there of a ledge of rock; not so much in Loon lake, however. It is estimated that that dam of eighty-two feet there would make seventeen feet at Lac LaCroix.

Mr. McCLEARN. That is, with the eighty-two foot dam at the mouth of Loon river, Loon lake and also Lac LaCroix would be flooded?

Mr. RANDOLPH. Yes.

Mr. McCLEARN. What would happen to Loon lake and the surrounding country?

Mr. RANDOLPH. It would be an absolute swamp. The timber would be submerged around it, naturally.

Mr. McCLEARN. What can you tell the Commission about this Lac LaCroix, Mr. Randolph? Will you describe it so they can understand it?

Mr. RANDOLPH. It has been referred to as one of the most beautiful lakes in Minnesota or even in the United States. They are all big boosters for the lake.

Mr. MAGRATH. Are the beaches gravel beaches?

Mr. RANDOLPH. They are sandy beaches.

Mr. McCLEARN. Has that become more popular year by year?

Mr. RANDOLPH. Yes; it is increasing very much every year in popularity.

Mr. McCLEARN. There are more people going there because of its natural beauty?

Mr. RANDOLPH. Yes.

Mr. McCLEARN. What about the physical contour there? Are there islands in the lake, and peninsulas and bays and inlets?

Mr. RANDOLPH. Yes.

Mr. McCLEARN. What would be the effect of raising the level of the water seventeen feet so far as these islands, peninsulas, coves, etc. are concerned?

Mr. RANDOLPH. It would submerge the islands and a lot of the main shores and peninsulas.

Mr. McCLEARN. Would that, in your opinion, destroy the scenic beauty of the place?

Mr. RANDOLPH. It certainly would. It could not help it.

Mr. CLARK. What sort of a shore line would be found after the raise of the water?

Mr. RANDOLPH. It would be all rock. It is rocky formation.

Mr. CLARK. There would be no beach?

Mr. RANDOLPH. It would be rock wherever it was not timbered. Of course it would kill out all the timber. It takes time to make a sandy beach, for the water to throw up the sand.

Mr. McCLEARN. What would be the effect of raising the water on Crane lake another foot?

Mr. RANDOLPH. I do not know whether that would do any great particular damage to the timber.

Mr. McCLEARN. What about the shore line and the settlers there?

Mr. RANDOLPH. Some of the settlers would be affected by that foot of a raise.

Mr. McCLEARN. What is the effect of increasing the lake level at Crane lake and then drawing off the water from time to time on fish, game and other things of that kind?

Mr. RANDOLPH. I do not know that it would affect that to any great extent. I do not believe the game would leave there on account of the water being either higher or lower, except water fowl.

Mr. McCLEARN. What about water fowl?

Mr. RANDOLPH. In low water we have no water fowl. In high water we have plenty of water fowl, that is in a normal state of water.

Mr. LOMMEN. The shore line has been spoken of and the Commission has inquired as to the setting back of the shore line in case of the elevation of the water. Most of the travel on these lakes in question is by a small boat with a motor attached?

Mr. RANDOLPH. Yes.

Mr. LOMMEN. Lac LaCroix is some thirty miles long and it is necessary in order to reach shore to come in with this motor boat?

Mr. RANDOLPH. Yes.

Mr. LOMMEN. The effect of the raising of the water elevation would be to leave submerged under water what was before the elevation timbered land, was it not?

Mr. RANDOLPH. Precisely, yes.

Mr. LOMMEN. To leave under the water dangerous obstructions to navigation?

Mr. RANDOLPH. It certainly would.

Mr. LOMMEN. Unsightly stumps of trees sticking out of the water's edge, whereas in its natural state it appears as a wooded shore line?

Mr. RANDOLPH. Yes.

Mr. CLARK. What is the appearance of this shore line at this time?

Mr. RANDOLPH. It is rather rocky and interspersed with sandy beaches.

Mr. CLARK. Is any considerable portion of it covered with dead or down timber?

Mr. RANDOLPH. No.

Mr. CHAFFEE. Are you acquainted with the value of lands on Crane lake?

Mr. RANDOLPH. Yes; partly.

Mr. CHAFFEE. Can you tell us something about those values? I mean just the land, not the timber, from a recreational standpoint?

Mr. RANDOLPH. I know land is selling down there at \$250 an acre eight miles from an automobile road on Sand Point lake. That was last week.

Mr. CHAFFEE. That was just a value as a camp site?

Mr. RANDOLPH. It was a cabin site.

Mr. CHAFFEE. Since you lived on the waters of Kabetogama lake, you have lived on Crane lake?

Mr. RANDOLPH. Yes.

Mr. CHAFFEE. Have you noticed the water going up rapidly when the water was being raised in the dam?

Mr. RANDOLPH. At times quite fast.

Mr. CHAFFEE. And then going down rapidly?

Mr. RANDOLPH. At times quite fast.

Mr. CHAFFEE. Have you noticed any interference with navigation in the narrows between Crane lake and Sand Point lake when the water was drawn down?

Mr. RANDOLPH. Yes; I have.

Mr. CHAFFEE. Were you able to go from Sand Point lake into Crane lake with a launch when the water was low?

Mr. RANDOLPH. No.

Mr. POWELL. What is the general depth of the water in these lakes?

Mr. RANDOLPH. From nothing to 200 feet.

Mr. POWELL. In the summer time is there much accumulation of water weeds in the lake?

Mr. RANDOLPH. In shallow bays, but the lake is generally free from weeds.

Mr. BACKUS. Do you remember the last time you and I took a trip up there, it was a little before we built the Kettle falls dam?

Mr. RANDOLPH. Yes.

Mr. BACKUS. It was a nice moonlight night and we were all night making the trip?

Mr. RANDOLPH. Yes.

Mr. BACKUS. I called attention to the good Norway timber, that it was too bad it was going to be cut down.

Mr. RANDOLPH. Yes.

Mr. BACKUS. As a matter of fact that was all private timber, was it not?

Mr. RANDOLPH. I believe it was.

Mr. BACKUS. And practically all of it has been cut by other companies, except what is owned by our company.

Mr. RANDOLPH. I believe it has.

Mr. BACKUS. As a matter of fact Kabetogama lake is not as beautiful a lake to-day as it was because they have cut the timber.

Mr. RANDOLPH. No.

Mr. BACKUS. And the dead stuff has fallen down and when it was not merchantable, they did not take it off the ground.

Mr. RANDOLPH. It is attributable to the submerged lands which you know as well as I do.

Mr. BACKUS. What timber was on that land?

Mr. RANDOLPH. Beautiful oak and elm of great scenic beauty, but of no value for commercial purposes.

Mr. BACKUS. The little oak and elm did not amount to anything—there was no real value?

Mr. RANDOLPH. You will admit that from the standpoint of a timber man.

Mr. BACKUS. As a matter of fact the night we went up there you and I never stopped for daylight or dark. We just commented on the beautiful scenery and it was because of the beautiful timber that has since been cut. I do not want the Commission to understand it was on account of the building of the Kettle falls dam. As a matter of fact it would be as beautiful with it as without it.

Mr. RANDOLPH. We can not construe it that way at all.

Mr. BACKUS. How can you construe it?

Mr. RANDOLPH. Well, there were some oaks and elm with a spread of sixty, seventy or more feet.

Mr. BACKUS. How many beautiful elms are up there?

Mr. RANDOLPH. I do not know how many. It would take many days to count them.

Mr. BACKUS. They are practically all dead?

Mr. RANDOLPH. Practically, except on some islands.

Mr. BACKUS. They were of no value to anybody to cut them?

Mr. RANDOLPH. They would be of more commercial value than any of the best pine tracts you cut in the State of Minnesota.

Mr. BACKUS. When?

Mr. RANDOLPH. Inside of five years if it is left the same way as it is now.

Mr. BACKUS. I am going to take you to another scene, to the chain of lakes above Kabetogama. Do you figure there would be any particular difference in that district as a summer resort if the lake was raised and the shores were receded and on high ground than there is to-day?

Mr. RANDOLPH. Most assuredly, if your project goes through.

Mr. BACKUS. I did not know you were opposing it. Why are you doing so?

Mr. RANDOLPH. For future generations that will go there to have an outing.

Mr. BACKUS. Do you not think there will be more people there if we have these reservoirs than otherwise?

Mr. RANDOLPH. It will take a long time to convince me of that.

Mr. BACKUS. We will try to convince you. You are an old fisherman?

Mr. RANDOLPH. Yes.

Mr. BACKUS. Will the fish be less or more or any different if the chain of lakes is enlarged?

Mr. RANDOLPH. The fishing as a hook and line proposition will not be nearly as good when you have to get around. The fish get in shallow water during the summer months.

Mr. BACKUS. Will there be any less fish?

Mr. RANDOLPH. Probably not, but they will be harder to catch.

Mr. McCLEARN. When you were talking about the oak and elm and other trees that you admitted were not valuable for commercial purposes, were you trying to estimate their value in dollars and cents or in scenic beauty?

Mr. RANDOLPH. It is hard to estimate their value in scenic beauty. As a commercial proposition for lumber they are absolutely worthless.

Mr. McCLEARN. They are not valuable for lumbering purposes anywhere.

Mr. RANDOLPH. No.

Mr. McCLEARN. But do those trees add to the land value of lake shore lots?

Mr. RANDOLPH. Most assuredly they do.

Mr. McCLEARN. Is the land therefore more valuable for outing purposes if it has timber of that variety on it?

Mr. RANDOLPH. Certainly.

Mr. ELMQUIST. How much has the water in Crane lake been increased this year?

Mr. RANDOLPH. About twelve feet.

Mr. ELMQUIST. Between what months?

Mr. RANDOLPH. Between the first of May or the middle of April and the first of July.

Mr. ELMQUIST. What is the greatest fall in the water levels that you have observed in a single year since the dam was put in at Kettle falls?

Mr. RANDOLPH. I think it is about twelve feet. There was probably fourteen feet of a drop.

Mr. ELMQUIST. At what time was that accomplished?

Mr. RANDOLPH. I do not know just at what time. That would be run off in six weeks.

Mr. BACKUS. What year?

Mr. RANDOLPH. This present year.

Mr. BACKUS. Between April and the present time?

Mr. RANDOLPH. Between April and the first of July of this year.

Mr. CLARK. I am somewhat confused as to your timber answers. You said in answer to a question by Mr. Backus the number of hardwood trees were practically unlimited and some of them had a spread of branches of at least sixty feet. Yet you gave as your opinion that they were worthless as a commercial proposition. Of course I am not acquainted with the value of timber, but in some parts of the United States that much hardwood timber would be worth as much as a stand of fine pine timber. I cannot reconcile the two statements in my mind.

Mr. RANDOLPH. This is not the quality of elm tree that is any good, and what we call a soft maple is an elm tree that grows quite large at the foot and no length to it. As a shade tree it is a very desirable tree.

Mr. CLARK. What about the oak?

Mr. RANDOLPH. The oak is a brash sort of timber. It is not good timber.

Mr. CLARK. But very valuable as an adjunct to a home.

Mr. RANDOLPH. That is about it.

Mr. POWELL. When was the Kettle falls dam put in?

Mr. RANDOLPH. In 1912, I think.

Mr. POWELL. You were cognizant of its being put in at the time it was put in?

Mr. RANDOLPH. Yes, I was right there.

Mr. POWELL. Were you interested in it at all? Did it affect you?

Mr. RANDOLPH. Yes, it affected me in a certain way.

Mr. POWELL. Do you not remember that a couple of years after the dam was put in, an application was made to this Commission to validate its construction there?

Mr. RANDOLPH. I was not aware of that fact. I heard a report that was so.

Mr. POWELL. It came to your notice by way of a report?

Mr. RANDOLPH. Yes.

Mr. POWELL. Did you know of any opposition being offered to legalizing that dam at that time?

Mr. RANDOLPH. No, I did not know there was any particular opposition to the dam once it was constructed.

Mr. POWELL. You would be aware of the sentiment in the community down on those lakes?

Mr. RANDOLPH. Yes.

Mr. POWELL. And you never knew of any opposition to legalizing it?

Mr. RANDOLPH. No. I do not know of anybody taking the matter up.

Mr. McCLEARN. Mr. Pratt, I am informed that Mr. Conzett wants to get away at ten o'clock.

Mr. PRATT. All right. Call Mr. Conzett.

TESTIMONY OF MR. GROVER CONZETT

(Mr. Grover Conzett was called as a witness on behalf of the State of Minnesota and testified as follows:)

Mr. PRATT. What is your profession?

Mr. CONZETT. Forestry.

Mr. PRATT. Minnesota?

Mr. CONZETT. State of Minnesota.

Mr. PRATT. How long have you been connected with the department?

Mr. CONZETT. Eleven years.

Mr. PRATT. You are one of the members of the Department of Conservation?

Mr. CONZETT. Yes.

Mr. PRATT. Composed of the state auditor, the game commissioner and yourself?

Mr. CONZETT. Yes, sir.

Mr. PRATT. You are familiar with these lakes we have been talking about here in a general way?

Mr. CONZETT. Yes.

Mr. PRATT. How long?

Mr. CONZETT. Since 1914.

Mr. PRATT. You have been over the territory adjoining them in the way of looking after the forests, trees and so on?

Mr. CONZETT. Yes.

Mr. PRATT. You have been on the lakes too?

Mr. CONZETT. Yes.

Mr. PRATT. Assuming the carrying out of the project somewhat as suggested at this hearing, I want to go into the matter very briefly with you. In the first place, in a general way, how much does the state own on the shores of these lakes running east from here—how many miles of them?

Mr. CONZETT. Beginning here at the falls and running to the Superior divide at North lake there is probably fifty miles of lake frontage mostly in the state.

Mr. PRATT. Of what character?

Mr. KONZETT. Those on Kabetogama are swamp lots. After you get to Lac LaCroix it is more rocky shore but not so much of it. I suppose two-thirds this way and one-third the other way.

Mr. PRATT. As regards the development of those shore lands and the use of them what has been withdrawn?

Mr. CONZETT. The lake shore has all been withdrawn from sale, and appraised. As there is application for it, it is divided into lots of fifty to one hundred feet frontage and leased on a ten year lease at a rate of \$10 to \$12 per year depending on the lake.

Mr. PRATT. Some of it has been leased?

Mr. CONZETT. Yes, about eighty lots I think by our department and by the audit department about twice that. That makes about 250 lots.

Mr. PRATT. Mostly on what lake?

Mr. CONZETT. Well it is mostly on lakes Vermilion and Trout and Burnside.

Mr. PRATT. Those are not on this chain of lakes. Let us stick to this chain of lakes.

Mr. CONZETT. Well, very few applications have been made on the boundary lakes because they have not been accessible, and people choose first the lands they can get to. As those are exhausted they go back in further.

Mr. PRATT. On each of those fronts there is a place for a beach lot between the lake line and the lake shore?

Mr. CONZETT. Yes, and camp sites are reserved on each section.

Mr. PRATT. The country south-west and north-west around Kabetogama is pretty low.

Mr. CONZETT. Level and low.

Mr. PRATT. And it is lower up around north of Lake Namakan?

Mr. CONZETT. The east end of Namakan is high and rocky.

Mr. PRATT. So any raise of six inches or a foot there covers more territory than it does in other places?

Mr. CONZETT. Yes.

Mr. PRATT. And there has been a lot of flooding by the dam there already?

Mr. CONZETT. Yes.

Mr. PRATT. The state are offering for sale at auction these lands, that is state lands, school lands and swamp lands from time to time?

Mr. CONZETT. Not in this tract. These have all been withdrawn from sale and established as a state forest. Beginning about east of Rainy practically everything on this watershed has been withdrawn from sale.

Mr. PRATT. And put into the state forest by the state legislature or under this forestry board as we used to call it?

Mr. CONZETT. The legislature passed that act about 1917, I think.

Mr. PRATT. And that area so withdrawn is designed and intended for reforestation where that is possible?

Mr. CONZETT. Yes, to get the most out of the land—reforestation or summer homes.

Mr. PRATT. A lot of it has been cut over in years back—timber gone?

Mr. CONZETT. Well, I would not say a lot of it. On the east half not much has been cut—practically none of it in Cook County.

Mr. PRATT. How about this over-run country in Kabetogama?

Mr. CONZETT. Much of that has been cut—much not.

Mr. PRATT. Any second growth?

Mr. CONZETT. It all has second growth.

Mr. PRATT. Suitable for forestry purposes?

Mr. CONZETT. Yes.

Mr. PRATT. But so far as that goes, that could be compensated for in money?

Mr. CONZETT. Yes, as far as the state is concerned that could be done.

Mr. PRATT. What is the timber? Have you any around the shores of these lakes in a general way?

Mr. CONZETT. Well, it is varied. The islands run pretty much to pine. The north shore and lowlands run to spruce and cedar. The rocky lands will run to jack pine, spruce, white pine and balsam.

Mr. PRATT. How about spruce?

Mr. CONZETT. Good.

Mr. PRATT. Cedar?

Mr. CONZETT. Not so good.

Mr. PRATT. How about pine lands?

Mr. CONZETT. Right close to the shore it is always a little stunted for 25, 30, or 40 feet. After you get back it is a good average of timber.

Mr. PRATT. Where there is not spruce, pine or cedar, are there good forest trees, hard or soft wood?

Mr. CONZETT. There is poplar or birch. It is not generally a hardwood country.

Mr. PRATT. Have you any idea how the flooding say of Lac La-Croix, seventeen feet, would run back on lands owned by the state or any lands along there?

Mr. CONZETT. No. In those that are rocky, it would go back only a short distance. In swamp or low lands it might go back a mile or two.

Mr. McCLEARN. How long have you been ranging on these international waters?

Mr. CONZETT. Since 1914—eleven years.

Mr. McCLEARN. You take in all the territory east of here to Cook county?

Mr. CONZETT. All of it. I have always been at large all over the state.

Mr. McCLEARN. You have had occasion then in the discharge of your official duties, to make this trip along this international boundary many times?

Mr. CONZETT. Some of it I have made with canoes; some of it I have made on foot or on snowshoes in winter; some of it by water.

Mr. McCLEARN. We have in Minnesota in Lake and Cook counties what is known as the Superior national forest.

Mr. CONZETT. Yes.

Mr. McCLEARN. That bounds on these lakes?

Mr. CONZETT. Part of them.

Mr. McCLEARN. That is federal forest reserve?

Mr. CONZETT. Yes.

Mr. McCLEARN. The United States Government has its own rangers to look after that part of it?

Mr. CONZETT. Yes.

Mr. McCLEARN. And it is under the jurisdiction of the National Park Association?

Mr. CONZETT. No, it is under the United States Forest Service Department.

Mr. McCLEARN. Across this boundary line to the north the Canadian Government has what is known as the Quetico forest reserve, has it not?

Mr. CONZETT. Yes.

Mr. McCLEARN. That also bounds on these lakes and rivers, does it not?

Mr. CONZETT. Yes.

Mr. McCLEARN. In both these forest reserves, that of the United States Government and that of the Canadian Government, they have a great variety of native timber, have they not?

Mr. CONZETT. Yes.

Mr. McCLEARN. And those forest reserves are frequented in the summer months anyway by thousands of nationals of both governments; is that true?

Mr. CONZETT. Yes. I have seen more from the American side than from the Canadian side.

Mr. McCLEARN. That may be due to the fact that your territory is on the American side. Can you tell us something about the natural scenic beauty of this stretch of lake, forest and stream for 120 miles east of us?

Mr. CONZETT. Well, all there is to it, it is one continuous string of lakes bordered with timber. In some places there will be one lake where it has been cut over, burned over; maybe the next lake will be virgin timber on both sides. Another lake may be old fires and up to a second growth, so it is a continuous belt with timber all the way from five years to two hundred years old and all the way from breast-high to one hundred feet high. I do not know of any particular characteristics.

Mr. McCLEARN. Tell us something about the lakes. Are they pretty, beautiful, or not?

Mr. CONZETT. Well, most of them are, of course, beautiful lakes; some of them never will be good lakes. Some of them are full of islands, good shores, some of them have good sand beaches. Some of them are very rocky and precipitous.

Mr. McCLEARN. Can you tell the Commission anything about the attraction that that wonderland has for the people living in other sections of the states or Canada?

Mr. CONZETT. Well, I think it has a great attraction. We built canoe routes all through that country, cleaned up the portages, put up signs there on the camping ground. There are people there all the time. You do not have to wait on a portage any time. Somebody is always coming.

Mr. McCLEARN. Has that travel been growing?

Mr. CONZETT. Yes.

Mr. McCLEARN. Has it developed great proportions in the last seven years?

Mr. CONZETT. I do not know what you would call great proportions, but it has doubled several times since I have been in that country.

Mr. McCLEARN. So that the Commission may get some idea of what we are talking about when we say recreational value of this stretch of country, it is possible to put a boat, a canoe, into Lake Superior at Ely or Tower or Winton, any of those places and go through that chain of lakes and come down here where we are sitting, or not?

Mr. CONZETT. You can go in almost any direction. We have them all cleaned up for fire protection purposes and we figure we can reach any of them with canoe outfits.

Mr. McCLEARN. Has the state or the federal government spent a large amount of money in cleaning up?

Mr. CONZETT. I think the federal government have spent more than the state.

Mr. McCLEARN. Are there lines of travel through this national forest on the American side?

Mr. CONZETT. Yes.

Mr. McCLEARN. You are familiar with the automobile routes through the state? You are familiar with No. 1 highway?

Mr. CONZETT. Yes.

Mr. McCLEARN. Starting down at Winona, where do you enter the state?

Mr. CONZETT. One comes in at Albert Lea.

Mr. McCLEARN. That comes all the way up to Duluth?

Mr. CONZETT. Yes, and goes to Grand Marais.

Mr. McCLEARN. That is a good highway all the way?

Mr. CONZETT. Yes.

Mr. McCLEARN. Tourists go there for 150 miles along the shores of Lake Superior?

Mr. CONZETT. Just about.

Mr. McCLEARN. You are familiar with the Isabel trail?

Mr. CONZETT. Yes.

Mr. McCLEARN. You go up about seventy miles along the shore of Lake Superior to Little Marais, north to Finland and then go through the national forest from Finland to Ely?

Mr. CONZETT. Yes.

Mr. McCLEARN. And at Ely you can put your canoe in one of these lakes and if you want to take the time, come down to where we are sitting?

Mr. CONZETT. Yes.

Mr. McCLEARN. Greater numbers of people are doing that year by year?

Mr. CONZETT. Yes, some go east, others west.

Mr. McCLEARN. Coming east of North lake?

Mr. CONZETT. No, from Ely go down Basswood, east to Hungerjack and out to Grand Marais.

Mr. McCLEARN. There is a chain of national lakes that flow into Pigeon river and down to Lake Superior?

Mr. CONZETT. Yes.

Mr. McCLEARN. That is also a summer playground.

Mr. CONZETT. Yes.

Mr. McCLEARN. Thousands and thousands of tourists?

Mr. CONZETT. Yes, the inlet of that is Grand Marais.

Mr. McCLEARN. That is in Cook county?

Mr. CONZETT. Yes.

Mr. McCLEARN. The northern end?

Mr. CONZETT. Saganaga is the big lake.

Mr. McCLEARN. Through that you can get into these others, can you not?

Mr. CONZETT. Yes.

Mr. McCLEARN. Are these lakes all timbered, have islands?

Mr. CONZETT. Yes.

Mr. McCLEARN. Peninsulas.

Mr. CONZETT. Yes.

Mr. McCLEARN. Do you know of any place in the United States that is as beautiful for summer outing purposes as this territory you have been describing?

Mr. CONZETT. No place I have ever been at.

Mr. McCLEARN. And you have never heard of anybody that had been at any place that was more beautiful?

Mr. CONZETT. No.

Mr. McCLEARN. In that event and as an expert in timber, assuming the water is raised 15 feet and lowered 15 feet in those lakes, is it possible to take off that timber and have conditions pretty much as you have them to-day, or will the construction of those reservoirs make it absolutely impossible to perpetuate these conditions?

Mr. CONZETT. I think too much of a fluctuation would. I think as much as 15 feet on lakes like Lake Saganaga would be too much to perpetuate the conditions you mention. A smaller fluctuation would not affect them so much.

Mr. McCLEARN. What about Lac LaCroix with 17 feet?

Mr. CONZETT. That would be about the same type as Lake Saganaga.

Mr. McCLEARN. And those are the two larger lakes after Namanagan?

Mr. CONZETT. Yes.

Mr. McCLEARN. So that 15 feet on the one and 17 feet on the other would destroy their scenic beauty forever, would it not?

Mr. CONZETT. It would reduce it.

Mr. McCLEARN. Would there be anything anybody would go to see after they had been flooded respectively 15 and 17 feet?

Mr. CONZETT. Well, in the course of a long, long time, these shores might restore themselves. It would be probably several hundred years.

Mr. McCLEARN. We are talking about this in the immediate future.

Mr. CONZETT. Well, I would not say they might not frequent it any longer, but it would certainly reduce the value to a large extent. I personally believe the value of that state-owned land particularly is greater for its summer tourist possibilities than for raising timber.

Mr. McCLEARN. Would that be destroyed by raising the level on these lakes?

Mr. CONZETT. Quite materially reduced.

Mr. ELMQUIST. Is the protection of your forests against fire the most difficult problem you have to deal with?

Mr. CONZETT. Yes. If we did not have any fires we would not have to worry much about the forests.

Mr. ELMQUIST. Assuming they should raise the level seventeen feet on Lac LaCroix and fifteen feet on Lake Saganaga, and three feet on Rainy lake, would that leave a lot of dead timber along the shore line?

Mr. CONZETT. Yes. It would leave more on those other lakes than on Saganaga lake.

Mr. ELMQUIST. What effect would that have on the fire hazard?

Mr. CONZETT. It would cause a serious hazard if it were left. If that timber was cleared up close to the ground, everything burned, it would not be quite so bad, but we have had many fires due to the water being down. During low water periods the fire runs the worst.

Mr. ELMQUIST. Would it be your recommendation that if those water levels are increased, all the dead and down timber should be cleared out?

Mr. CONZETT. If that was cleared out, we would not have much argument in regard to the fire hazard. I would recommend that so far as I am concerned in fire protection work and particularly for canoe transportation and the like of that, that snags and driftwood be cleared out. Long grass, fallen logs and driftwood constitute considerable fire hazard.

Mr. ELMQUIST. From the standpoint of tourists if the water levels were increased in Lac LaCroix 15 feet, many of the islands would of course be submerged?

Mr. CONZETT. Yes.

Mr. ELMQUIST. And the same would follow in lake Saganaga?

Mr. CONZETT. Yes.

Mr. ELMQUIST. Are these islands a protection to tourists from windstorms?

Mr. CONZETT. Yes.

Mr. ELMQUIST. Therefore, if they were submerged, the lakes would not be as attractive to tourists as they are now?

Mr. CONZETT. No, they would not be as safe either.

Mr. POWELL. You have personal knowledge, I suppose, of the number of licenses that are issued year after year?

Mr. CONZETT. For what?

Mr. POWELL. For those lots of lands.

Mr. CONZETT. Leases, yes sir.

Mr. POWELL. About how many of these would be issued in the last twelve months?

Mr. CONZETT. There have not been nearly as many in the last twelve months as before that. I have the idea that our department has probably leased about twenty sites, maybe thirty.

Mr. POWELL. In the last year?

Mr. CONZETT. In the last year. Our department has the forest area and the audit department has the rest. I believe the audit department have leased more than we have,—fully as much.

Mr. POWELL. How about the year previously? You say there were more leases issued that year.

Mr. CONZETT. Yes. I suppose that was because we opened up some good sites on choice lakes.

Mr. POWELL. About how many leases were issued in the previous twelve months?

Mr. CONZETT. I suppose there were probably thirty or forty, and this other guess would be twenty or thirty.

Mr. POWELL. How about the year previous to that again?

Mr. CONZETT. They tapered down because we had not started pushing so much.

Mr. POWELL. Those twenty or thirty leases you issued and the twenty or thirty that the auditor issued would stretch over your whole district, would they not?

Mr. CONZETT. Yes, the whole state land area.

Mr. POWELL. That would be how many miles?

Mr. CONZETT. Square miles?

Mr. POWELL. No, lineal miles.

Mr. CONZETT. It would stretch over the extreme ends.

Mr. POWELL. Along the river?

Mr. CONZETT. You mean along the boundary waters?

Mr. POWELL. Yes.

Mr. CONZETT. I do not know. There are very few leases along the boundary waters. The applications have been closer in. They have been probably within six miles of the boundary waters.

Mr. POWELL. Then about how many would be issued along the boundary waters in the last three years?

Mr. CONZETT. I do not suppose there are ten leases on the boundary waters, all told. That is a guess, but it is near enough.

Mr. McCUMBER. If the timber were removed before flooding the land that would be flooded by these lakes if a rise of fifteen and seventeen feet respectively were made, would that seriously affect the scenic beauty around the borders of the lakes?

Mr. CONZETT. You mean not counting the islands?

Mr. McCUMBER. Around the contours of the lakes.

Mr. CONZETT. You would lose your sand beaches of course and the low areas would be swampy. But the high rocky land would not be materially affected. Of course where the water line has been there for ages, it has a definite appearance; it has boulders. The other is straight rock.

Mr. McCUMBER. The boulders you refer to are those left there by the ice?

Mr. CONZETT. They are ground and rounded off. There is always a little ledge there that makes a sort of landing, about 15 to 20 feet before the water starts getting too deep.

Mr. McCUMBER. You would lose whatever beauty that added to the lake?

Mr. CONZETT. Yes, and the advantage of landing and docks and the like of that.

Mr. McCUMBER. But it would not change the general aspect or appearance of the surrounding country?

Mr. CONZETT. Not materially, except the islands.

Sir WILLIAM HEARST. Have you had any experience so that you would like to speak as to the cost of clearing the shore line such as Senator McCumber has spoken of?

Mr. CONZETT. Well, that would be about the same as clearing right-of-way or land. You would have to cut it close to the ground. The merchantable part would be taken out and disposed of and the rest burned. I suppose it would vary from \$5 an acre. There might be places where you would get a large tract of timber that was not merchantable, although that was small stuff, and it might run up to \$60 an acre to clear it, pile it up and burn it.

Mr. McCUMBER. You are making allowance for cutting it close?

Mr. CONZETT. Yes, not grubbing, but low chopping.

(Thereupon, at 10.15 p. m. the Commission adjourned until 9.30 a. m. Tuesday, September 29.)

TUESDAY, SEPTEMBER 29, 1925.

The Commission reconvened, pursuant to the adjournment, at 9.30 a. m.

Mr. CLARK. Gentlemen, will you please come to order? Mr. McClearn, are you ready to proceed?

Mr. McCLEARN. I desire first to submit for the record a resolution of the Elks Club of Duluth with reference to this matter as follows:

DULUTH, MINN., *September 12th, 1925.*

INTERNATIONAL BOUNDARY COMMISSION.

GENTLEMEN: The following resolution was adopted at a meeting of the advisory committee of Duluth Lodge No. 133, Benevolent and Protective Order of Elks, of Duluth, Minn., at a meeting on September 11th, 1925:

Resolved, That the advisory committee of Duluth Lodge No. 133, B. P. O. E. does hereby protest against the plans to construct dams on the international waterways in the Arrowhead country, as now contemplated by various interests. We are opposed to a change in the water levels of the lakes in northern Minnesota, and believe that such a program would be very detrimental to the shore lines of the lakes and would work serious injury to northern Minnesota and vicinity.

Resolved further, that the Hon. James L. Travers of Duluth, Minn., be and he is hereby appointed as a committee to present this resolution to the International Boundary Commission.

Very respectfully yours,

DULUTH LODGE NO. 133, BENEVOLENT AND PROTECTIVE ORDER OF ELKS,

By J. SHAMBEAU, Its Exalted Ruler.

Attest:

E. W. STEVENS,

Its Secretary.

Mr. McCLEARN. I next wish to call the attention of the Commission to two statutes passed by the Legislature of Minnesota in 1923.

Mr. CLARK. Are they still in effect?

Mr. McCLEARN. They are still in effect. They have to do with this particular matter. The first one is chapter 115, known as Senate file No. 499 of the session laws of Minnesota for the year 1923, an act relating to the dedication by users of trails and portages in certain cases to the public with the purposes of travel. That dedicates all of the trails in these boundary waters. I shall not read the act unless the members of the Commission desire me to do so.

Mr. POWELL. Is there any description of the user that constitutes a dedication?

Mr. McCLEARN. There is in the next act that I wish to call attention to. However, I will read this portion of it:

Any trail or portage between navigable bodies of waters of this state which has been in continued and uninterrupted use by the general public for fifteen years or more is a trail or portage for the purposes of travel and shall be deemed to have been dedicated by user to the public as a trail or portage. This act shall apply only to forest trails on established canoe routes, and the

public shall have the right to use same for the purposes of travel to the same extent as public highways. The width of trails and portages dedicated by user after the passage of this act shall be eight feet on each side of the center line of such trail or portages.

This act shall take effect and be in force from and after its passage.

This was approved March 31, 1923, and is still in effect.

Mr. POWELL. You construe that as having what you might call a retroactive effect?

Mr. McCLEARN. Yes; they are all dedicated by user.

Mr. POWELL. It is not speaking for the future? It is submitted for things as they are?

Mr. McCLEARN. Yes. I also call the Commission's attention to chapter 430, being Senate file No. 556 of the session laws of 1923. I shall read only the title of the act, omitting the act itself, as it is quite lengthy and covers the matter in general.

An Act defining and relating to the creation, acquisition, care, improvement, supervision, control and management of state parks, state public camping grounds, state monument sites and state monuments, withdrawing from sale and providing for the leasing and use of state lands bordering on or adjacent to meandered lakes and other public waters at water courses and defining certain offenses and describing penalties therefor.

This has to do with the statement and testimony of Mr. W. D. Washburn who appeared before you last evening.

Mr. POWELL. What do you mean by meandered lakes?

Mr. McCLEARN. Some of these men who are dealing with that subject can probably give you that information. A meandered lake, I understand, is one that has been meandered and surveyed by the state or federal government by metes and bounds.

Mr. POWELL. In other words, it has been run out.

Mr. McCLEARN. Yes. I will now, Mr. Chairman, call on Mr. George H. Selover, of Minneapolis, the state president of the Izaak Walton League, who represents that league at this hearing.

STATEMENT OF MR. GEORGE H. SELOVER

Mr. SELOVER. Mr. Chairman, and gentlemen of the Commission, what I will have to say will be as briefly said as possible.

The Izaak Walton League nationally is an organization of those who want to preserve what little we have left of the outdoors. It is less than four years old. It has about two thousand chapters over the United States, principally in the Mississippi valley. Some of those chapters have twenty or twenty-five members. In Chicago there is one chapter that has three thousand members, those members representing the leaders of business and professional thought of the city. The national organization has its headquarters in Chicago and

has an executive committee or board of directors of seventy-five, most of whom are prominent conservationists and outdoor people, scientists of the country. The organization pays no salaries. It is wholly an attempt to do a little bit for the public good in the direction of saving or preserving, or perhaps, in a way, creating in the place of what has been ruthlessly destroyed some of the outdoors in the United States.

I have here and I beg leave to file with you some documents in the nature of protests from the members of this league in Minnesota. This bunch of protests that I have here comes from chapters around the state. I do not know how many thousand signatures there are. They were coming in rapidly when I left home.

This other package of some two or three hundred—I have not counted them—came from the chapters of Illinois, Iowa, Wisconsin, Indiana, Arkansas and Missouri. They were sent out only a little while ago and were coming in at the rate of fifty or seventy a day when I left to attend this hearing. I will ask leave to file the balance of them when they come in.

Mr. CLARK. How many of these chapters or individuals who signed these documents are personally or in any other way acquainted with the local situation?

Mr. SELOVER. A great many of them are. That is the territory, Mr. Chairman, from which these canoeists are drawn. The people who were interested in forming these chapters were those who did have knowledge of and acquaintance with this country up here and the need of different things to be done in the Mississippi valley. It is not a creative concern; it grew out of the necessities of the case.

Mr. CLARK. Of course, you understand the purpose of my question. In any organization such as yours it is exceedingly easy to get a large number of protests or petitions or anything of that sort from people who are interested in the general subject but who have no specific knowledge of the location in question.

Mr. SELOVER. I think that is very often the case. For that reason I have taken time to describe to you what this organization is and what it means. Doubtless there are many who signed these petitions who have never been on these grounds. And doubtless there are many who have never been up here who hope to be in the future. It is more to get before you the idea that there is a great organization which has in mind the general care of these things where governmental agencies or legislatures perhaps are permitting them to go to waste.

I am also somewhat familiar with this country. I have lived on Basswood lake every summer for five years and have canoed and fished and tented and camped and done about all the things you have heard about this country being good for. From personal

experience I have some little knowledge of it. I want to call your attention to just a few things in this connection. It happens that nature has put the more accessible, the more useful and the more beautiful portions of these lakes on the American side. On the Canadian side there are very few islands.

In Crooked lake, in Lac LaCroix, in Basswood lake and in Big Saganaga lake practically all of the islands of any consequence are on the American side. In the first place, the government, as you have heard, has taken cognizance of these facts and has included all of this territory in the reserve of state lands. It has furthermore put almost all of this territory into a game preserve. Beyond that the national government has put all of this district that you have been hearing about, except Basswood, into the Superior national forest. In other words, conscience or whatever it may be, the feeling of care for the future, has urged these agencies to such an extent that they have done practically all that Congress and the state can do to say that those things shall be preserved and not destroyed.

The very fact that the legislature has provided that the shore lines must not be sold is an evidence of that; also the fact that there are 850,000 acres of government land in Superior national forest that by legislation and by the fiat of the President were withdrawn from permanent entry in order that they may be kept. How much of that is right along the boundary and how much of these islands are affected, I am not able to state, but there is more or less, and there is a lot of it that would be affected by the backflow of these waters.

I think as your investigations go on your attention will be called more and more to the fact that particularly on the lower lying American side these elevations will cause a much greater overflow than you have heard anything about. You got a glimpse of it when Mr. Conzett said it might go back one or two miles. I know where it will go back four or five miles on a sixteen or seventeen foot rise. The tributary lakes in the national forest will be affected, and the streams connecting them and these pathways or trails will be destroyed and obliterated.

Just a word about the fishing. That may not mean to the Commission a very important subject, but we foolish folks who are interested in these things think it is a very important subject. In the first place, the use of this country up here for summer tourists will be absolutely destroyed if there is no fishing. That sounds like a large order to say that this will destroy the fishing, but let me tell the Commission that in my opinion that will come about.

To go back a little bit: The proponent of this matter mentioned swamps here as if they were of no account. That has been the

contention in the United States for a great many years, but it is rapidly changing. A swamp is something that the government has found in many instances is not only valuable but is being preserved. As an instance of that let me call your attention to the fact that two years ago, in June of 1924, at the instance and upon the request of the Izaak Walton League national organization the Congress passed and the President signed the first swamp salvage act in the history of the country that I know anything about. That was to preserve 300 miles of swamp lands on each side of the main channel of the Mississippi River for the sole purpose of preserving fish and other life therein.

Mr. CLARK. Can you cite that law?

Mr. SELOVER. I can not give you a technical description of it from memory, but I can furnish you with a printed copy of it from my office.

Mr. CLARK. Give just a reference to it.

Mr. SELOVER. It was signed by the President on the 21st of June, 1924, and it is known as The Upper Mississippi Wild Life and Fish Refuge Act. A million and a half dollars was appropriated and Mr. Cox, who was our honored state forester here for a good many years in Minnesota, has within the last few weeks been appointed by the biological survey and is now in charge of the purchase of the land. Why was that done? Because fish in the Mississippi River must have those lagoons and swamps to obtain their food and where their eggs can hatch and their young grow up. If that is eliminated the small amount of black bass will become a thing of the past. Without appropriation the biological survey sent fish last year into twenty-seven states.

Why are these swamps along this border of any value? Permit me in a nonscientific way to tell you in a few words. Take Basswood. At many places along that shore the rocky formation runs from six to ten miles before you strike a bay with a swamp in it. Clear from Lac LaCroix to Big Saganaga there is a rocky formation and the swamps and marshes are the exception by all odds. There are none too many of them. There is perhaps a foot and a half or two feet of water in there and a great deposit of black silt with vegetable life. Without that vegetable life the small organisms on which the new born fish live cannot exist. If you remove that vegetable life there cannot be any fish life. It is the foundation of all fish life. They cannot live among the rocks; they cannot get anything to eat; and if you put four or five feet of water on those marshes, even the five feet as is here proposed on Basswood lake, and keep it there for six months, you will ruin every fish feeding ground there. And if that water is kept on there year after year where are

they going to go? They are simply going to die. And if you put it up sixteen or seventeen feet and trust to the future to provide a place where they may live and breed, how is it going to be created? One hundred thousand years will not do it. One hundred thousand years will not create a swamp on the high rocky side hills of these lakes. I do not know whether a half a million years will do it.

Here are these lakes. They are teeming with fish. If you permit destruction—and it may be desirable to do it; I do not know—if there is a great public necessity, that will have to give way; but if the starting point of those fish is permitted to be destroyed, then the bigger ones will simply eat each other up, unless they can escape to other more favored districts and get out of there. But if you take the situation of the lake which has no particular outlet or where the outlet is going to be dammed up on this end and on the other end without any more fishway than there is over here, you have locked those fish up in a pond where in a few years they will all die.

I refer you gentlemen to the fisheries department of your own governments and the biological survey to find out whether I am overstating the facts.

Mr. CLARK. In general throughout the United States has there been within the last twenty-five years an increase or a decrease in the fish in domestic waters?

Mr. SELOVER. I think there has been a decided decrease.

Mr. CLARK. You think there has been a decided decrease?

Mr. SELOVER. That has been so up in the central west, I know.

Mr. CLARK. Then, the efforts made and the expenditure of hundreds of thousands of dollars on our fisheries have been useless, in your opinion?

Mr. SELOVER. In my opinion, Senator, too much attention has been paid to the artificial end of it and too little to the natural end, and they are beginning to find that out. This Mississippi river project is a great example of that. What they are going to do there is to not have a simple hatchery, but to preserve the natural hatcheries and permit nature to take its course, and I think it is true and that it is the concensus of opinion of fish and game people that the present methods of artificial hatcheries are not reaching the results that they expected. Part of it is because not enough attention is paid to the lakes in which they dump the fish, whether food conditions are right and whether temperature is right. Many times we hear in Minnesota that the fish commissioner put fish in those lakes year after year and there is no result. We want these preserved as nature has made them and then you will not have to appropriate any money for artificial stimulation.

The carp and fish of that character cannot be successfully propagated artificially. They must be reared in a region of their own. That is the reason this Mississippi river project has been undertaken. It has been demonstrated that that class of fish must be left alone and protected. The last legislature in Minnesota, recognizing what I have said to be true, has given Mr. Gould, the chief commissioner, power for the first time to draw a line and put posts around every spawning ground in the state and prohibit for all time any interference with them; recognizing the fact that nature has placed a plentiful supply in there for their home and the place where they breed and rear their young is protected. I have heard it said that the authorities would not care whether there was a closed season on black bass in Minnesota or not if that were done.

Mr. CLARK. In that way you protect the cannibal fish as well as any others?

Mr. SELOVER. I do not know what you mean by cannibal fish.

Mr. CLARK. I mean those that live on other fish.

Mr. SELOVER. They all do that. Some are worse than others.

Mr. CLARK. There are some fish that are designated in that way and they are great pests and destroyers of other classes of fish.

Mr. SELOVER. As I say, some are much worse than others. Attention is being paid particularly to those of the classes that I have described that are known more as game fish and less as predatory.

Mr. CLARK. But your fish preserve protects predatory fish the same as the others?

Mr. SELOVER. I am sorry to say that that must be so.

Mr. McCUMBER. You have given one cause for the decrease in the number of fish. You have failed to mention another cause which I had supposed was the principal cause, and that is the vast increase in the number of fishermen.

Mr. DUBOIS. Also, in addition to that, a great many men make a living commercially out of these fish. In the Rocky mountains where I come from they seined the beautiful trout and dynamited them and shipped them to the cities and got good prices for them. That has had a great deal to do with the decrease of fish also, but every state recognizes the line that you are talking on now. Every state has made rigid laws for the protection of their fish and public sentiment is getting behind those laws, in the Rocky mountain states, at any rate.

Mr. McCUMBER. I notice that many of the witnesses who have so far testified have regarded the raising of the level of these lakes as dangerous because it created additional swamps. Your testimony is that it is necessary to protect the swamps that we have, and you wish we had more of them in order to propagate the fish. I do not know

just to what extent the raising would increase the swamps, but it would seem to me that from your line of argument in many instances it might be beneficial.

Mr. SELOVER. I listened to that yesterday and had very much the same notion that you have, Senator; but I would like to have whoever made that suggestion diagram that thing for your benefit. I have climbed around these rocky hills. If they can show you on Lac LaCroix or Basswood lake one place between the high rocky ridges where by raising the water to a new elevation of fifteen feet it will make a swamp out of it, I wish they would show it.

Now, take the reverse condition. What happens when you put water down twelve or fourteen feet? All along this boundary there are white fish. There is a legitimate use for them as food under proper state regulation. They have been caught all along here until part of the lake has been closed. There are also lake trout and other fish. Those two to my knowledge spawn in the fall. They put their spawn on the rocks near the shore. They have to place that spawn within a foot and a half of the surface or they will not live. There is something about the wave action, something about the amount of pressure and other things that I do not understand but which I have had explained to me by experts which make it natural and necessary for those things to be put in those places.

Winter is the time when the water goes down on account of these power projects, as I understand it. In the summer they can get along without drawing on their reservoirs, but in the winter when the flow of rain stops they begin to draw down. Now what is going to happen to the eggs of those fish in the lakes if you put that water down an inch on those rocks? In twenty-four hours they will be dead. Perhaps it is desirable to kill them. But the lowering of the water will kill all the eggs of the species I have mentioned, the lake trout and the white fish.

The pike or pickerel is not as desirable perhaps, but the wall-eyed pike is the great game fish of the boundary. Their eggs are deposited on the heavy banks or shallow places at the mouths of streams on sand or small rocks. Those places are comparatively few along here. In the spring people may go and see those pike at the mouths of those rivers. They enter from one of those lakes to the other, swarming by thousands. Why? Because they are seeking a place to deposit their eggs and the places are very few. There are miles of territory around there but there are only a few places where they can deposit their eggs. But if those places are flooded five or fifteen feet where are they going to go except among the rocks and how long is it going to take for nature to recreate these spawning grounds? That is what we are up against. Of course

these considerations I speak of are of no moment as against some great public necessity, and if the Commission here come to the conclusion that there is involved in this a question of great public interest and necessity, we will of course take a back seat and say nothing. But I have failed to see, either as a sportsman or a lawyer, in the showing that has so far been made here where there has been the slightest real interest shown of a public nature. Of course a new industry or a little more population or something of that sort will pay a few more men and a few more taxes or something of that kind. But that is not in my judgment the commencement of an argument in favor of destroying 120 miles of that sort of country.

Let us say that the natural level is at a certain point on the lake. If some of those shores are dropped 15 feet or raised 15 feet, it will not make much difference in scenery, but the great bulk of those shores slope back and before the crest of that rise comes, it is 100 feet, 200 feet, two or four miles away. You put that water up there and what happens? Let us suppose all the timber has been removed at an expense which will stagger this proposition when you come to look at it. Never mind that. What have you covered? You have from a few feet to three or four miles of leaf mold, of earth, of all sorts of vegetable matter from a few inches to two or three or four feet deep in the hollows, covered with water. We have told you about the beautiful water where you can see twenty or thirty feet to the bottom. How long will that water be even fit for a fish to drink if that matter is thrown into it, until all of that matter is assimilated in some way in the body of these great lakes? Will that take a year or fifty years, and in the meantime every time a wave goes up on there, every time the power interests lower the water or raise it, the waves come in a new place and dig out a whole lot more of that black stuff and fill the lakes with it. When is it going to end? As I say, that is of no great account if some great public necessity demands. I have here a copy of the application which does not seem yet to have been furnished to your Commission, and which, with your permission I will hand to the secretary. It reads as follows:

FORT FRANCES PULP AND PAPER COMPANY LIMITED,

Fort Frances, Ont., Aug. 25, 1920.

MINISTER OF LANDS AND FORESTS,

Surveys Department, Parliament Building, Toronto, Ont.

DEAR SIR: This application is for the right to construct dams at the outlets of the several lakes along the international water above Rainy lake for the control of the waters flowing into Namakan lake as well as in cases where power is available, the right to develop such power and erect power plants:

(1) The right to construct and control a permanent masonry dam at the north outlet of Lac LaCroix, where the water of Lac LaCroix now ordinarily

flows into Namakan river, and to divert this entire flow to the western outlet where it will then pass on to Namakan lake. The crest of said dam to be at elevation 1,205.

(2) The right to construct a dam at the west outlet of Lac LaCroix and the right to raise Lac LaCroix and to overflow Ontario lands on the north side and the right to flood such falls as may be affected on the streams entering Lac LaCroix by the dam so constructed at the west outlet of Lac LaCroix, with its crest at elevation 1,200. The right to construct such power plants as may be necessary to utilize the flow of the stream at this point.

(3) The right to construct and control a permanent dam and to erect such power plants as may be necessary to utilize flow of stream at Rebecca falls at outlet of Iron lake. Crest of said dam to be not higher than elevation 1,225 above mean sea level. Right to overflow lands on Iron lake as will be affected by said dam and also any falls or rapids on streams entering Iron lake as will be affected at said dam. Present elevation of Iron lake and Bottle lake, 1,217.

(5) The right to construct and control a permanent dam at the outlet of Bottle lake. Crest of dam to be at elevation 1,230 to control Iron lake, as above.

(6) The right to construct and control a permanent dam with crest elevation not higher than 1,260 feet, at the west outlet of Crooked lake, at the head of Curtain falls, and to erect such power plants as may be necessary to utilize and control the flow of the lake at this point. Right to overflow lands on Crooked lake and to overflow such falls as will be affected at the head of Crooked lake by dam so constructed at Curtain falls. Present elevation of Crooked lake 1,245.

(7) Right to construct and control a permanent dam at the outlet of Basswood lake and to erect such power plants as may be necessary to control the flow of said lake at this point. Crest of dam not to be higher than elevation 1,305 above mean sea level. Right to overflow lands on the shores of Basswood lake, as may be affected by said dam. Present elevation of Basswood lake 1,300.

(8) Right to construct and control a permanent dam at the outlet of Birch lake with a crest not higher than elevation 1,360 above mean sea level and to overflow such lands in Canada as will be affected by said dam, including flowage on Carp lake. Present elevation Birch lake 1,335. Present elevation Carp lake 1,357.

(9) The right to construct and control a permanent dam at the outlet of Knife lake. Crest of said dam not to be higher than elevation 1,420. Right to flow such lands in Canada as will be affected on the north shores of Knife and Cypress lakes by said dam. Present elevation Knife and Cypress lakes 1,385.

(10) The right to construct and control a permanent dam for storage and power purposes at the outlet of Sturgeon lake, and to control the flow of Maligne river at this point. Crest of said dam not to be above elevation 1,250 above sea level. Right to flow lands on shores of Sturgeon lake and to flow out any falls on streams entering Sturgeon lake that may be affected by dam at said elevation. Present elevation of Sturgeon lake 1,220.

(11) Right to construct and control a permanent dam for storage purposes at the outlet of Kwynipi lake. Crest of said dam to be not over thirty feet above present normal water elevation.

The normal water elevation being the elevation taken at a time when Saganaga lake is at elevation 1,432.

(12) The right to construct and control a permanent dam at outlet of Saganagons lake and to control the flow into Maligne river at this point.

Crest of said dam not to be above elevation 1,450 above mean sea level. Right to overflow such lands in Canada bordering on Saganagons lake, Saganaga lake and North Light lake as may be affected by dam with crest at elevation 1,450. Present elevation of Saganagons lake 1,432. Present elevation of Saganaga lake 1,432. Present elevation of North Light lake 1,441.

Respectfully submitted.

FORT FRANCES PULP AND PAPER CO. LTD.
E. W. BACKUS, *President*.

I want to call your attention in passing to the fact that for some reason, of which I am not now advised, the present or second application, if we may call it such—and to us it is, if not to the Commission—has for the time being omitted a number of lakes from the category originally covered. From here to Basswood lake, we have first Lac LaCroix and then Crooked, two over from Namakan lake, and then Basswood. The statement filed by Mr. Backus' company and which is still pending provides for the raising of Basswood lake five feet from 1,300 to 1,305. That lake is twenty to thirty miles long and has several arms eight to ten miles long. Even five feet of a raise would flood a considerable stretch and as he figures it would furnish six billion feet of storage, but just there the Knife river comes in with falls there now of 15 feet and in this original proposition which I must assume is bound to crop up before you get through with it, it is proposed at the outlet of Birch lake to construct a dam 25 feet high.

Mr. CLARK. What is the date of that application?

Mr. SELOVER. This is the one referred to as of August 25, 1920, and the only one pending, and I understand Mr. Backus to say it was still pending. I am quite familiar with that country. In three or four places it would back the water three or four miles into the Superior forest. It would create a considerable amount of storage. The figures we have not been given. It would inundate a great amount of country and would connect immediately with the Basswood flowage and this mill pond effect would keep right on going. A little further up the Knife lake breaks into it in three or four places and at the mouth of Knife lake it is proposed to put in a dam of 32 to 35 feet. Knife lake is partly on the boundary and one part is on the American side for ten miles and the other side is ten or twelve miles long. The storage would be large and the damage would be considerable. It would go off especially on the American side for long distances.

Mr. McCUMBER. What is meant by making a dam 25 feet? Does that mean 25 feet above the present level of the water so as to raise the water 25 feet, or is it 25 feet from the base of the dam which may be constructed downstream? I just want an explanation of it so as to understand what is really intended.

Mr. SELOVER. The application reads: "Right to construct and control a permanent dam at the outlet of Birch lake with a crest not higher than elevation 1,360 above mean sea level and to overflow such lands in Canada as will be affected by said dam, including flowage on Carp lake. Present elevation Birch lake 1,335."

It is to be 25 feet above what they call the present elevation of Birch lake which I understand to mean the high water mark.

Mr. McCUMBER. It does not so state.

Mr. SELOVER. No, and I would be glad to have them say so. I do not know whether it is mean or high or low level water mark.

Mr. McCUMBER. I want to know whether the 25 feet is intended to mean to raise the former level of the water 25 feet.

Mr. SELOVER. I can only assume if these people figure on spending large sums of money in there to construct a dam, they contemplate using it when necessary.

Mr. McCUMBER. But it depends whether it is at the point where it flows from the lake or where it flows over some other obstacle or dam.

Mr. SELOVER. These dams are proposed to be located at the outlets of the lakes and I understand if these dams are filled up, it would bring the water up to the 25.

Mr. CLARK. A 25-foot dam means a structure 25 feet in height from base to top. Is that the way you understand it, or do you mean a dam 25 feet above the surface of the water, which might be a dam 50 feet or 75 feet high so far as the structure is concerned?

Mr. SELOVER. Perhaps I misunderstand. My understanding was that it was to put a dam, no matter how high it is, on the lower side that will back the water up 25 feet.

Mr. ELMQUIST. Why do you not ask Mr. Backus? He is here.

Mr. BACKUS. With all due respect to Mr. Selover, it seems to me he is undertaking to make a general statement here that does not mean anything. Take the dam built at International Falls and Fort Frances. We built it just as far down as we could in order to get the head. It depends on whether it is susceptible of a power development or just an ordinary storage dam, so that the same rule does not apply in every case. In this case at International Falls and Fort Frances of course the dam was built so that the head would be as high as possible, and consequently the dam, we will say, was 35 or 40 feet high and raised the water say ten feet. The application you read is out of date. Our letter of yesterday gives the lake elevations proposed and the present water level of those lakes.

Mr. SELOVER. What do you base your 27 billion cubic feet of storage on in Lac LaCroix if it was not the 16 feet 6 inches rise in the water?

Mr. BACKUS. That is probably what it means, but if you build a dam 25 feet high, that does not mean you raise the water 25 feet.

Mr. CLARK. I would like to get back to my question. When you say you are asking for a dam 25 feet high, what do you mean? Is that the structure you propose to put in?

Mr. BACKUS. That is the structure.

Mr. CLARK. It does not make any difference whether there is any water behind it or not?

Mr. BACKUS. It does not mean you raise the level of the lake.

Mr. SELOVER. Does that not mean it is capable of backing up the water 25 feet?

Mr. BACKUS. No.

Mr. SELOVER. Why not?

Mr. BACKUS. Because when you build the dam at a lower level, the dam may be 24 feet high before you get to the present level of the lake.

Mr. SELOVER. When you propose on Lac LaCroix to raise the water 16 feet, the dam, in order that you may get the benefit of that, must be 16 feet above the present water level.

Mr. BACKUS. Certainly. But in raising Lac LaCroix 15 and 16 feet that dam has to be 70 feet high.

Mr. SELOVER. At the mouth of Loon lake it is 70 or 80 feet high, but the effect of it is, if the water is brought to the top of it, to put 16 feet on top of the present level in Lac LaCroix.

Mr. BACKUS. That is certainly true.

Mr. SELOVER. Then my original statement is correct.

Mr. BACKUS. But when you say the dam is 25 feet high and therefore you are raising the lake 25 feet, you are on the wrong foot there.

Mr. McCUMBER. I think we understand it.

Mr. CLARK. I certainly do not understand all he said. My idea of a dam 25 feet high is that the structure is 25 feet from the bottom to the top and—

Mr. SELOVER. That is not what is proposed.

Mr. CLARK. I am giving you my understanding of the mechanism and the 25 feet begins at the foundation of the structure whether it is 25 feet below or above water. It is the same as any other structure of 25 feet.

Mr. McCLEARN. When it is said in the application that the purpose of putting the dam there is to get an elevation on the lake of 15 or 25 feet, that changes it.

Mr. CLARK. I do not understand the application says that the water is to be raised the number of feet of the construction of the dam.

Mr. McCLEARN. It does not refer to a dam.

Mr. CLARK. The dam is what we are talking about right now. I think the matter can be cleared up.

Mr. POWELL. We all understand it now.

Mr. CLARK. No, but we do not understand it. There is just the same difference between the witness and myself as there was in the beginning. His contention is that a dam 25 feet high is to raise the water 25 feet.

Mr. SELOVER. Permit me to read his intention in this application and I think that will clear it up. "Crest of dam not to be higher than elevation 1,305 above mean sea level. Right to overflow lands on the shores of Basswood lake as may be affected by said dam. Present elevation of Basswood lake 1300."

That is only five feet, but their figures have to do only with the crest of the dam; it is how high the dam is to be in relation to the water behind it. If they cannot put a dam in there that will give them this 16 feet and consequently 27 billion cubic feet of storage on Lac LaCroix, they are wasting their time, and they cannot do that unless their dam is high enough to hold that water back.

Mr. POWELL. Then the dam would raise the level about five feet?

Mr. SELOVER. No. I read from one that was only about five feet. If I have not made myself plain, I am not going to say anything further in support of it.

Mr. CLARK. You have certainly made yourself very plain. I understand your contention. I hope you understand mine.

Mr. SELOVER. I desire to hand to the secretary this application as a matter of history and to add one or two other words to what I have said. It seems to me, if this project goes through it will, for all scenic and tourist purposes, really destroy that country. The people will not come in there. On the United States side that country belongs to the people. It belongs particularly in its usefulness to those who are within reasonable distance of it and especially those in the Mississippi valley. After they were thoroughly informed of the project, I doubt if one per cent of the people of the Mississippi valley could be got to vote for any such project as this. Perhaps it is selfish on their part, but they have before them the example of the federal government and their own government to preserve these things. The Mississippi valley is only a little corner of the United States and it seems hard that the teeming millions of fish cannot be preserved without people coming in to make money. As regards the lower Basswood falls that Mr. Opsahl was speaking about with his 53 feet of a fall, if you look at it, for commercial purposes, it is probably not worth five cents. You can go to sleep with the noise of the water and you can catch fish in it. But if it could be brought within a few miles of the city of St. Louis, millions of dollars would not buy it. In the last

five to ten years the question of transportation has changed the condition of things. You can get here from the Twin Cities in three hours and a half. How much faster that can be done in a few years, we do not know. These things change. Our plea to you is to help to preserve things as they are unless some overweening public necessity absolutely demands their use.

Mr. CLARK. Have any of you gentlemen—and I say I sympathize with you in many of your views—considered the question of the support of the surrounding country in the way of taxable property and things of that sort? Suppose you keep these reserves in public ownership and lock up the possible commercial avenues. What is going to support the community? Who is going to pay the taxes? I ask that from a little personal experience. I live in a county 250 miles long and 80 miles wide. It has an expensive county organization. Yet the general government reserves to these and other purposes which you speak of in that community a tract of land larger than the State of Massachusetts, from which the county and the state cannot derive any benefit whatever, which was closed to all exploitation of a commercial character and which nearly bankrupted the county in which I live. Have you considered that question of taxation with reference to this matter here? I do not know that it cuts any figure or that it is of sufficient magnitude to cut any figure; but you have established communities here which must be supported or else must go into the discard as many other communities in the United States have gone, because of lack of taxable property to sustain the government of the municipality.

Mr. SELOVER. That question, I think, is more acute in the eastern part of the Superior national forest and Lake county than here and it has been given a great deal of consideration especially by the governmental agencies with respect to buying lands in the reserve. I am not nearly so well posted as to its effect over here and I would not undertake to answer as to that. The only thing I can say is that it is a broad question of governmental policy and the greatest good to the greatest number is what usually works out. I do not know that you can do any of these things without injuring someone.

Mr. CLARK. Mr. Washburn spoke of a county which is just east of here with \$800,000 indebtedness and very little taxable property on which to pay the indebtedness.

Mr. SELOVER. That is the one I refer to. That is probably as extreme a case of the kind as possible and it is a severe question with them. But that has been done and the federal government seems to have established the policy of reserving certain lands.

Mr. McCUMBER. If I understand the position of those who are opposed to any change, it is that more money is to be made out of

tourists than could possibly be made out of industries or out of the land.

Mr. SELOVER. That may be the position of others but it is not the point I am emphasizing.

Mr. CLARK. That does not go into the municipal coffers. That goes into the individual's pockets and in an indirect way benefits the municipality.

Mr. SELOVER. Hotels spring up, the values of lake shore property rise and so on. I have no desire to go into that. My feeling in the matter was entirely aside from anything in the way of commercial gain or anything that had anything to do with that.

Mr. BACKUS. If it is agreeable, I would like to have Mr. Selover read a typical circular letter which was sent out and which brought back the resolutions he is going to file. I have not seen any of them.

Mr. SELOVER. I do not think there are any of them here.

Mr. BACKUS. A typical circular, you say, brought back all of these representations. I think it is only fair to have one sample of that read so that we may know what the true situation is.

Mr. SELOVER. It can be furnished for your files. I did not bring anything with me except some of those petitions.

Mr. McCUMBER. If they are stereotyped petitions, would it not be as well to furnish the Commission, so as not to lumber up its record, with one of them, and state the number of signatures of the societies and the number of signatures in each society instead of filing this large number of documents?

Mr. SELOVER. It can be tabulated and the result given in that form, as the Commission may prefer. They are here for any disposition you may desire to make.

Mr. McCUMBER. It would save the Commission a great deal of work if that could be done.

Mr. BACKUS. I would like to see what brought forth these replies and I would like to have one of them read and a copy of the petition read.

Mr. SELOVER. We will furnish that for your record. There is not a copy of it here.

(The forms of circular letter and protest referred to are as follows:)

IZAAK WALTON LEAGUE OF AMERICA INCORPORATED,
536 Lake Shore Drive, Chicago, September 16, 1925.

DEAR BROTHER SECRETARY: An emergency exists along our northern boundary. Power interests are reaching for 125 miles of lakes and rivers from International Falls to Big Saganaga, on the upper edge of the Superior national forest.

They propose to put in dams of from five to eighty-two feet in height and flood scores of square miles of forests, flooding the feeding and spawning grounds for fish and of feeding areas for ducks and other aquatic fowl; besides

making a series of dirty mill ponds out of some of the most beautiful scenery and delightful canoeing ground in America.

The Minnesota Division is taking the lead in fighting this matter and needs the support of the chapters in the Mississippi valley. Will you please have the officers of your chapter sign the enclosed protest and mail directly to Mr. George H. Selover, 910 McKnight Building, Minneapolis, Minnesota, the President of the Minnesota Division, who will personally present the same to the Commission on the 28th of this month at International Falls or within a few days thereafter?

This act of vandalism must be stopped and you can help.

Please attend to this IMMEDIATELY and send the protest to Mr. Selover TODAY.

Very sincerely yours,

CARL E. SIMON,
Executive Secretary, Izaak Walton League of America.

PROTEST

The undersigned, ----- Chapter of the Izaak Walton League of America, State of -----, does hereby solemnly protest to the International Joint Commission and to the United States Government against permitting any power interests or anyone else to flood the lakes and rivers along the northern Minnesota boundary, since we consider that that district should be preserved in its present condition inviolate.

----- Chapter,
Izaak Walton League of America,
By ----- President.
By ----- Secretary.

Dated at -----
this ----- day of September, A. D. 1925.

STATEMENT OF MR. C. M. HILLMAN

Mr. HILLMAN. In reply to the question, Mr. Chairman, that you just asked as to the result of locking up the great commercial interests tight and denying the petition for this development as a revenue for taxes, etc., I would like to call attention to the position that our county, Lake county, Minnesota, is in.

Mr. CLARK. That is the one to which Mr. Washburn referred?

Mr. HILLMAN. Yes. We have some eight hundred thousand dollars of outstanding debts that were brought about mostly by the building of roads into these territories primarily for the furnishing of transportation of tourists into these sections. Our agriculture up in that section does not amount to much, but we are relying on the money that is brought in by tourists and I would like to compare this country with that of Florida where lands are utterly worthless outside of the value that the climate gives them, which value we have also. By giving a permit of this kind you are taking away that industry that the tourist business permits and which is going

to produce revenue by taxation for another community over here, such as Lake county. That is the reason why Lake county is objecting and is entering resolutions here, both the Lake County Development Association, which has the welfare of the development of the country at heart, and the Board of County Commissioners which sent me here to enter protest of the County Board in as feeble a way as I can with the information we have at hand.

I will acknowledge that we can not give anything specific until we know what these contours are and how much damage is going to be done, but I would like to call attention to the increase in tax-paying property in the last five years in Two Harbors, for instance. We have built an eighty thousand dollar hotel. We have six garages worth probably four or five hundred thousand dollars. We have in the last two years put in five filling stations. All of those things have a bearing on this tourist industry which means much to us and which we believe will be seriously hampered by virtue of the fact of these proposed changes which will cause the popularity of this country to wane up there.

While I am speaking, I would like to present these resolutions from the Lake County Board and from the Lake County Development Association.

RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF LAKE COUNTY, MINN.

Whereas, an application has been made to the International Joint Commission for the establishment of water levels on the streams and lakes on the international boundary between the Dominion of Canada and the United States; and

Whereas, the establishment of such levels will add nothing of value to the real estate of Lake county but on the other hand will reduce values by virtue of the flooding of lands suitable for farming and timber culture and the flooding of many of the beautiful sites which are coming to be recognized of immeasurable value for the recreational possibilities of the region; and

Whereas, such change of levels is planned primarily for storage purposes rather than for the establishment of industry in Lake county.

Be it resolved by the Board of County Commissioners in regular session that the opposition to the establishment of such proposed levels be transmitted to the Joint International Commission on international waters.

Adopted this 26th day of September, 1925.

RESOLUTION OF LAKE COUNTY DEVELOPMENT ASSOCIATION

TWO HARBORS, MINN.

Whereas, certain interests have planned to secure the change of existing water levels on streams and lakes a part of and flowing into the international boundary waters between Minnesota and the Dominion of Canada; and

Whereas, the carrying out of such plans as are contemplated can have no other effect than the creation of large storage reservoirs which will inundate

large areas of land in Lake county suitable for agriculture, forestry and recreation purposes; and

Whereas, there is nothing in the contemplated change of levels which will add to the industry or tax producing value but on the other hand will have a tendency to reduce tax revenues.

Be it resolved, by the Lake County Development Association that it is unalterably opposed to the change of such levels except as to provide installation of improvements which will add power development within the county, and

Be it further resolved, that the International Joint Commission on international waters be apprised of the sentiment of this association which reflects the sentiment of the residents of Lake county.

Adopted September 18, 1925.

Mr. BACKUS. May I ask Mr. Selover a general question, Mr. Chairman, in order to get as much information before the Commission as possible? Mr. Selover, how thoroughly are you familiar with the national forest that you have referred to which contain about eight hundred thousand acres?

Mr. SELOVER. I am more familiar with the boundary waters than any of the rest of it. I have been on a good share of the rest of it, not all of it.

Mr. BACKUS. Is it not a fact that that is practically an old cut-over region and that the timber of commercial value has been removed?

Mr. SELOVER. All along the American side until you get up to the other end of Little Knife from Basswood is of that character. There is not any what you would call commercial timber in there. It is up twenty or thirty-five feet now, though, and is beginning to look like a woods.

Mr. BACKUS. That is largely birch and poplar, is it not?

Mr. SELOVER. Yes.

Mr. BACKUS. As a matter of fact, it is an abandoned district of cut-over land, at least eight hundred thousand acres, which is set aside now and they are going to try to have a little reforestation there?

Mr. SELOVER. There is a lot of timber over in the reserve.

Mr. BACKUS. Cuttings largely?

Mr. SELOVER. I think it is largely. Mr. Richie, the supervisor of the forests, is here and he can give you that information.

Mr. BACKUS. I am not picking out any individual tracts. Some companies have left their timber standing. As a matter of fact, that territory, the eight hundred thousand acres, is not an agricultural country, and if reforestation should be practiced there, the building of these reservoirs and the creation of any water powers that are possible of development would not affect that adversely, would it?

Mr. SELOVER. All along Lac LaCroix and Crooked lake these reservoirs cover every foot of the shore.

Mr. BACKUS. That is true, but I say that the creation of these reservoirs or powers would not affect adversely the reforestation of the national park?

Mr. SELOVER. It would not affect that at all above the high water mark that you propose to make, of course.

Mr. BACKUS. Well, the other matter we claim would benefit the tourists and pleasure-seekers, and that would be a matter for the Commission to decide if they make their investigation.

Mr. SELOVER. Surely.

Mr. McCLEARN. I wish now to call Mr. Peterson.

Mr. SELOVER. May I complete a statement, Mr. Chairman? You asked me for a reference to that Upper Mississippi River Wild Life and Fish Refuge Act, and I find that the State of Minnesota at this last legislature by chapter 76 of the laws of 1925, Senate file No. 496, gave its consent to the acquisition of the land under that and described it as, "An Act approved June 7, 1924, entitled 'An Act to establish the upper Mississippi River Wild Life and Fish Refuge.'"

When I get back to the city I will furnish the Commission with the technical reference to it in the United States revised statutes at large.

Mr. CLARK. We would be glad to have you do so.

TESTIMONY OF MR. M. W. PETERSON

(M. W. Peterson was produced as a witness, and testified as follows:)

Mr. McCLEARN. Where do you live, Mr. Peterson?

Mr. PETERSON. Ely, Minnesota.

Mr. McCLEARN. How long have you lived there?

Mr. PETERSON. Since 1920.

Mr. McCLEARN. What is your business?

Mr. PETERSON. I am in the tourist business at present and have been for four years.

Mr. McCLEARN. Just describe for the Commission briefly what you mean by tourist business.

Mr. PETERSON. We operate a firm known as the Wilderness Outfitters. We outfit tourists completely. We had the idea in 1921 and figured that it would be a paying business. No one had paid any attention to the touring business up to that time. There were not so many coming up there then. Our start was made with four second-hand canoes in August 1921. We continued through 1921 until the end of the season and found that it was a profitable business. We continued adding to our investment every season. Our inventory this year was over ten thousand dollars as an investment.

Mr. McCLEARN. Besides outfitting these tourists do you have any facilities for furnishing guides and taking them over designated routes?

Mr. PETERSON. Yes; we have. We have now a string which has increased this year until we used fifteen at one time.

Mr. McCLEARN. Fifteen guides?

Mr. PETERSON. Yes.

Mr. McCLEARN. That is for the purpose of taking the tourists out over these lakes?

Mr. PETERSON. Yes.

Mr. McCLEARN. Have you yourself been over and around the lakes so as to be able to tell us about the portages and trails and places frequented by the tourists?

Mr. PETERSON. I have been over a considerable portion of them. I have been over the international boundary from the east end of Knife lake and the west end of Namakan lake.

Mr. POWELL. Is there no map showing these trails?

Mr. PETERSON. I have not one with me.

Mr. McCLEARN. We will ask permission to file such a map, Mr. Commissioner. These fifteen guides that you had last year were working out of what station, Mr. Peterson?

Mr. PETERSON. They were working out of our station at Ely. They are practically all Ely men.

Mr. McCLEARN. Will you tell the Commission briefly how you get into this chain of lakes from Ely?

Mr. PETERSON. We go by truck from Ely to Winton, a distance of four miles. We go through Winton over Pipestone falls into Pipestone bay and eventually into Basswood.

Mr. McCLEARN. From Basswood the usual course is where?

Mr. PETERSON. Then they spread all over; they go east and north and west.

Mr. McCLEARN. What is the fact as to whether or not these international lakes have become more popular in recent years?

Mr. PETERSON. That is certainly true. The number of people taking these trips has increased every year by leaps and bounds. I think the figures were given last night.

Mr. McCLEARN. That is from Ely?

Mr. PETERSON. Yes; that is from Ely alone. I do not know what our competitors may have done. There are three other firms in Winton and one in Ely who also outfit tourists.

Mr. McCLEARN. What would you say would be the effect of the raising of the lake levels there on these trails and portages that you have described?

Mr. PETERSON. As far as our trade is concerned, and I think I know it pretty well, it would be very detrimental. There are a few

undoubtedly who would say that the flooding of Bass river and the elimination of various portages would be a benefit, but the general trend of thought among the canoeists is that they would rather make those portages than go around a concrete dam and they would rather go down a river than down a big lake and then portage around the dam. It does not add to the attractiveness as a canoeist sees it.

Mr. POWELL. Is the difference between following a portage and going around a concrete dam a very serious one? Is there much more inconvenience in one route than in the other?

Mr. PETERSON. I think it would be more inconvenient to go around the dam than over the portage.

Mr. POWELL. If there are falls or rapids they use the portage and carry the canoe over the portage to the waters below?

Mr. PETERSON. Yes.

Mr. POWELL. Would there be much more serious inconvenience if instead of doing that they came down to the concrete dam and then deposited the canoe in the water below?

Mr. PETERSON. No; it would be practically the same, except the beauty of those falls is not there to attract the tourists. He sees some beauty in the falls where he would not see it in the power dam.

Mr. POWELL. Of course, it might not be as attractive. Men like the exhilarating sport of shooting rapids.

Mr. CHAFFEE. How many canoes have you now?

Mr. PETERSON. We have sixty-five at present carrying equipment to handle that number of people.

Mr. CHAFFEE. Were they all in use this last summer?

Mr. PETERSON. Everything was in use and we had to borrow others.

Mr. CLARK. How many people will a canoe accommodate?

Mr. PETERSON. Not over three.

Mr. CLARK. Three besides the guide?

Mr. PETERSON. No; three people altogether. All parties do not take guides. Roughly speaking, I would say only twenty-five per cent of the parties that go out take guides.

Mr. LOMMEN. Your figures as to the amount of canoe traffic include only those who come from a great distance to Ely for a vacation, and not those legal residents of northern Minnesota who have their own canoes and supplies?

Mr. PETERSON. That is right. We have no record of any of them.

Mr. LOMMEN. I presume that the number of canoeists that you outfit is only a small fraction of those people in this vicinity who quite often use those canoes during a season?

Mr. PETERSON. Yes; you are quite right. I know of a great many of them who ship canoes in.

Mr. LOMMEN. Is it not a fact that these people whom you have outfitted come from all parts of the central west?

Mr. PETERSON. Probably, but they are spread all over the United States. We even have some from foreign countries. We had one party from Africa and one party from China.

Mr. LOMMEN. To a great extent are not these men who take these canoe trips men who have traveled largely?

Mr. PETERSON. They are to a large extent.

Mr. BACKUS. What proportion of the people coming into Ely follow the boundary waters down to Namakan lake, and what proportion find their way north into the Hunters Island country and into Canada?

Mr. PETERSON. It would be pretty hard to answer that question. Not many of them come clear through to International Falls. We have sent parties through to this town, but it is not an ideal trip. They go north into Hunters Island. They object to the big lake travel. They do not like Rainy lake or Namakan lake.

Mr. POWELL. Do not most of the people go through Agnes lake into Manitou and get to the north side of Hunters Island in that way rather than use the boundary waters?

Mr. PETERSON. No; not people that we have sent up there.

Mr. SELOVER. Would you say there were any lakes on the boundary that were used as much as Lac LaCroix?

Mr. PETERSON. Basswood lake is used extensively.

Mr. SELOVER. Outside of that what are the most popular lakes?

Mr. PETERSON. Crooked lake and Saganaga lake.

Mr. ELMQUIST. Is it the general practice to camp on the main land or on the islands?

Mr. PETERSON. I think that is about fifty-fifty. Many of them prefer to camp on the islands and others for fear of losing their canoes prefer to camp on the main land. I could not say as to the percentage.

Mr. McCLEARN. I think, if the Commission please, that concludes the statement that the Arrowhead Association wishes to offer for your consideration at this time, but we would like to reserve the right to supply at any future time any information that the Commission may desire, or if there be other testimony that we are required to meet, we would like an opportunity to meet it at such time and place as the Commission directs.

Mr. CLARK. Are there any other interests that desire to be heard at this time?

STATEMENT OF MR. E. C. OBERHOLTZER

Mr. OBERHOLTZER. Gentlemen, the first question, I believe, of the reference refers to Rainy lake, and I am especially representing the Rainy Lakers, as we call them. Unlike my neighbor, Mr. Backus, who has an island near mine in the lake, I have had opportunity to visit all the lakes concerned in this reference, some of them many times.

I came in originally in 1907 by way of Ely and Fall lake, down to Basswood and along Crooked lake. I came again in 1909 and traveled that summer twenty-five hundred miles along the tributary of these lakes down along to the boundary and through the forest reserve and into the tributaries north of Rainy lake, the Manitou, etc.

In the last sixteen years I have averaged probably five hundred miles a year in a canoe along these lakes. I give that for what it may be worth as experience.

I shall be very brief in presenting my argument, but there are several points that I should like to make. First of all about the entire proposition. The most authoritative document we have had up to the present time is the report of your Commission published in 1917. We have been guided largely by the figures of your engineers in that report. That report made a recommendation that Rainy lake be raised to the 500 level, exactly as Mr. Backus recommended yesterday. It recommended further that Namakan lake be raised **a certain height which Mr. Backus does not recommend** but instead would get the same results by backing the water up in the upper **lakes beyond Namakan**. As Mr. Backus pointed out yesterday, the results will be just the same.

The Commission very carefully indicated in its report in 1917 that the object of all this storage is to develop especially power in the Winnipeg river. It will result, as the Commission said, in the possible available power of 2,500 horsepower at International Falls. That is, if it is fully utilized. But in order to get the maximum on the Winnipeg river below Lake of the Woods the most available power at International Falls and Fort Frances is 700 horsepower.

I believe I am right in supposing that Mr. Backus from his own figures verified this report of the Commission and verified those results from the plan he has in mind. In other words, there will be available here at International Falls and Fort Frances an addition of seven hundred horsepower if you are going to use the maximum in the Winnipeg river; an addition, in other words, of about three and a half percent of the power now available.

Mr. Backus asks why all the alarm. Why have people been getting out propaganda beforehand? It is precisely because, in the

first place, the people have known that the Commission in 1917 recommended this plan; that there is evidently some powerful group behind it at the present time or the two governments would not send you gentlemen here to investigate the whole situation.

It happens that in 1916 the people who live on Rainy lake had a very vivid example of exactly what this 500 level means. The proposed level of 500 was reached at that time, as the power interests said, by act of God. We had a flood in this season and the 500 level was reached and slightly exceeded. At that time there were no beaches left on Rainy lake anywhere. At that time there were trees all along the shores completely submerged. There were many islands that you could see only by the trees sticking out from the rocks. Many of those islands were permanently damaged. The water finally receded and since that time it has very seldom, if ever, exceeded the limit which your Commission previously authorized, the 497 limit, and it is not quite 497 at the present time.

Now there are standing at various points along the shores of Rainy lake pine trees and Norway and white pine from fifty to one hundred and fifty years old in the water and dead. Those trees could never have attained their height or age if at any time within the memory of man they had ever been submerged for more than a few days or possibly months, varying according to the nature of the trees. Some trees will stand submerged in water longer than others.

Mr. CLARK. Was the flood of 1916 the cause of the fatality of the trees?

Mr. OBERHOLTZER. No; it is the result of their standing in water now. Those trees that I am now speaking of are standing in water at the present time. There were additional trees killed during that summer by the high water. The point is that no matter what testimony may be presented as to previous levels by geologists who are speaking of geological periods before the time of man—and in those times the lake levels were very much higher—in the memory of man the lake has never permanently been as high as it is now. Otherwise, these trees a hundred and fifty years old would not be standing in the water.

Now, the interests that I am representing admit immediately the value of the power that Mr. Backus wishes to develop. There could not be any question about that. As Mr. Backus showed yesterday, power which can be developed for \$5.70 per horsepower, and which is cheap at \$100 a horsepower, is a fine thing. We would not question that. But my interests do not for one moment admit any of the benefits that Mr. Backus would ascribe to his development of this region.

For instance, the region affected is all east of International Falls. It involves, as the engineers of the Commission said, 14,500 square miles. Now, that region is all to be turned into a storage basin. We are to get in return at International Falls and Fort Frances, the only communities in that entire region, an increase of 700 horsepower, three and a half per cent. What will three and a half per cent do for industry at this point? How will it benefit the industry except in the most trifling manner at this point? How can it recompense this region for the loss of that 14,500 square miles of country, providing it is damaged as we think it is and as we are prepared to substantiate our views?

So we immediately deny that there will be any benefit to any interests, and we have diligently inquired everywhere as to who will benefit from this development. We immediately admit that there will be a huge benefit to the companies operating power down in the Winnipeg river or at the outlet of the Lake of the Woods, and I believe Mr. Backus is chiefly interested in that.

We admit, however, a growth of the towns and that sort of thing; but we are then sacrificing over 14,500 square miles for a development down at the north end of the Lake of the Woods, 150 miles from here, in Canadian territory.

If we could be persuaded that that is for the public good, as has been said by some of the other speakers, we would be only too glad to give up our own hope for this region. We feel that the burden of proof in a proposition like this rests upon the people who want to make the change. It rests really upon the companies associated with Mr. Backus. If they want this we feel that they should prove that it is going to be a public benefit.

We deny any gain whatever to navigation east of here. There may be a possible gain in Rainy river to the west of us. To the east there is sufficient water now to take care of any navigation that is there at present or likely to be there in the future. The only way in which it could be a gain to navigation in the east would be for the whole region here to be converted into canals. Then boats in large numbers could enter. But there is no plan at present developed and there is not likely to be one developed in the future. Of course, the idea of size naturally appeals to Mr. Backus, and he feels that it is an advantage to make the lakes larger. We deny immediately that there is the slightest advantage in making the lakes larger, because at the same time you make them uglier, and we are prepared to substantiate that view.

The idea of a more stable level is one of the arguments advanced for this proposition. We contend that instead of a more stable level you will have fluctuations at a higher level. The one lake that

will be made more stable will be the Lake of the Woods. We get that because the entire object of the development is to provide storage for the Lake of the Woods, but in order to do that you must, when you have abundant rainfall, hold it back as much as possible, and when you are backing it back you must maintain that height in the Lake of the Woods and have that dependable outflow from the Lake of the Woods. These lakes are going to fluctuate at least as much as they do now, in my opinion, with the possible exception of Rainy lake, but I believe they are going to fluctuate more. In addition you have to take account of the fact that in flood stages, as your own engineers show in your report of 1917, all vegetation to a point two or three feet higher than the present high water level will be affected. The reason that will be affected will be that you have exaggerated the wash of the waves in storms and more wash when the lake is larger. In addition you have considerable danger of floods during freshets. When you dam a lake you make it less easy than before to let the water out, but you have more water in there than even under normal conditions. In rainy seasons you have an extraordinary amount of water to let out and you cannot let it out as fast as you could before there was a dam, and at times, as happened in Rainy lake in 1916, you may raise your lake four, five, or ten feet above the level at which you intend to hold it. There you have incalculable damage possible in addition to what may be done by the immediate raising of the lakes to the desired levels.

We claim that we have another plan for the development of this same region which means far more to the people and is of far more immediate public interest than the plan presented by the power company. It is a plan inaugurated in 1909 by President Roosevelt when he set aside the Superior national forest. In his wisdom he foresaw that public sentiment was in favor of just such preservation. At the same time by Order-in-Council Ontario set aside the Quetico forest reserve, one of the most beautiful forest reserves in the north at that time. The people were extremely proud of this at the time because it was the first case of international cooperation for some project of that sort. People had worked from both sides to get this tract of public land set aside for public use and exploitation. This policy has since been extended by some of the states as some speakers have shown, and it is the policy we should like to see continued. We believe this region has the possibilities of the Thousand Islands of the St. Lawrence, or northern Maine, of some of the wonderful region in Europe for recreation. It is a region in which the people have already acquired a public interest by the fact of all these homes, by the fact that people come in here year after year and are coming in more and more every year. They are just acquiring a

taste now and it is nothing compared with what it will be in ten or fifteen years. When you destroy the beauty of that region you destroy its utility. The people who come in are coming in first of all because it is wild and natural, because it is all that a city cannot give them. It is the truest recreation they can get. Those people when they buy a site do it in the same way as they buy a site in a city, for some particular feature it possesses. It may be a group of trees, a sandy beach, a beautiful sand point, with a promontory at the end of it. If you destroy that one feature—if the property comprises 100 acres and you destroy only half an acre which contains that essential feature, you destroy the entire value of the land. It has no other value for summer purposes. Its utility may be entirely gone.

I can cite innumerable cases right here on Rainy lake and take the Commissioners there and show them how it will be affected. If they raise Rainy lake to 500, it will destroy every beach except one which will remain about a foot out of water and will therefore probably wash away. There is a ten-acre property of Major Roberts here with a sand beach connecting the two main parts. If this lake is raised two feet, that will be completely under water. The Major has spent from ten to twenty thousand dollars on that island. There will remain three separate rocky points with these elaborate buildings on them. What value will that property have if the lake is raised? The only possible way you can estimate such damage is not by acreage as the engineers would show but by its value before the lake was raised and its value after. The value will be tremendously decreased on one property after another on that lake.

There is another summer property owned by Mrs. McPeak where she has gradually built up by small means an establishment of considerable size. That is one of the most level sand beaches about a mile east of Ranier. That beach at two feet more will be completely under the water. At one foot more it will be under wash in any storm. Some of the houses will be standing in water if it is raised two feet, but if her beach is destroyed, the point for which it is named will be cut off from the mainland and her whole enterprise will be separated, flooded and ruined.

The interest of Ranier in this proposition cannot possibly be overestimated. Ranier is a small village situated here, the only village at the outlet of Rainy lake. It is at the very entrance of this beautiful region, what I consider the most beautiful lake land in America, if not in the world. This village has no value of interest except the development of this promising country to the east. The interest of Ranier in this question is therefore immense. I have with me to-day resolutions adopted by mass meeting recently at Ranier

summing up these very objections which I have made because it is of such vital moment to this little village of Ranier.

I hope there is no mistaking our feelings in this matter. We are absolutely opposed to any increase whatever in Rainy lake or in any of these lakes to the east, and we are prepared to continue to fight it to the very end because we are absolutely convinced that it means the destruction of the beauties of that region and its utility for anything except power purposes. You may suppose all these people assembled here are simply mistaken and misinformed, but most of them are people who either live on those lakes or use them in some way or another. Is it to be supposed that all these people are completely mistaken; that they know nothing about the effect on their property of a rise of one or two feet? They can go and measure it. They know where the water is now and they know what a rise of two or three feet will mean. I would like to file these resolutions summing up these objections. They are as follows:

A RESOLUTION ADOPTED AT A MASS MEETING IN THE VILLAGE OF RANIER, MINNESOTA,
WEDNESDAY EVENING, SEPTEMBER 23, 1925

To the honorable members of the International Joint Commission, Washington, D. C., and Ottawa, Canada:

Whereas, your Commission has been asked to report upon all aspects of a plan to raise the level of Rainy lake and of tributary lakes for the development of additional water power; and

Whereas, the power to be developed from the contemplated control is to be concentrated chiefly on the Winnipeg river, at a distant point in Canada, and solely for private profit; and

Whereas, the present authorized maximum level of Rainy lake is already above the natural high water mark, as clearly proved by the water-killing of trees from fifty to one hundred years old; and

Whereas, any further increase in the water level would be highly destructive not only to timber but to beaches, scenery, and private and public property of all descriptions; and

Whereas, the future of Ranier, situated as it is at the outlet of Rainy lake, depends mainly upon the preservation, development, and use of Rainy lake and tributaries as a summer playground; and

Whereas, the potential value of Rainy lake and its tributaries for summer purposes, though undeveloped, outweighs in importance, both because of its vast possibilities and its public nature, any benefits to be derived from the development of private power enterprises.

Therefore be it resolved, that this meeting of residents, property owners, and other interested citizens records itself as unalterably opposed to any further increase in the level of Rainy lake or of any tributary lakes and in particular to the proposal now before the Commission.

And be it further resolved, that this assembly respectfully petitions the honorable commissioners, in their capacity as guardians of the public welfare, to throw the weight of their authority against the present contemplated control.

E. C. OBERHOLTZER, *Chairman.*

P. MEGILL, *Secretary.*

Mr. CLARK. Are these lakes that will be affected included within the boundary of the forest reserve, Canadian and American?

Mr. OBERHOLTZER. Yes, the Superior forest touches the boundary lakes continuously to Lac LaCroix and Crooked lake. It touches at very many points on Basswood and Namakan and other lakes to the east. The Quetico forest reserve is bounded entirely on the south by this chain of lakes.

Mr. CLARK. Are you familiar with the authority which the Department of Agriculture has over these forest reserves?

Mr. OBERHOLTZER. No. I do not know exactly how the forest reserve is administered.

Mr. McCLEARN. They have what they call the National Parks Commission which has to do with all of the national parks.

Mr. SELOVER. The superintendent of that forest is here if you should desire to hear him.

Mr. CLARK. The question that was occurring in my mind was whether or not there was not sufficient authority in the Department of Agriculture to limit activities in the national forest so far as they might think necessary to protect all the features you are speaking of. Has that occurred to any of you?

Mr. McCLEARN. We have assumed that before the Commission got through, if it were of opinion that it should go on with this hearing, the National Power Commission as well as the commission having to do with the national parks would each of them have to be heard. We have gone on the assumption that this was a preliminary hearing for the purpose of investigation, and when the time comes some of us at least are prepared on the law of the question to present argument on the proposition.

Mr. CLARK. I do not wish to enter on a discussion of the course of procedure now.

Mr. McCLEARN. We presumed this was a preliminary investigation. We presume the Commission is not now exercising its authority or jurisdiction to determine the matter.

Mr. CLARK. I was wondering whether you had lost sight of the authority and power of the federal government through its agricultural department.

STATEMENT OF DR. F. A. DUNSMOOR

Dr. DUNSMOOR. I wish to endorse and supplement what has already been said so eloquently by my friend and neighbor Mr. Oberholtzer. No one up to this time has ever accused me of saying behind anyone's back what I would not say to his face. I want to say first, something concerning Mr. Backus, and that is that when he was a very much younger and better man, we were very good friends.

Our boys slept together and loved each other. I want to take off my hat to a man of such acute ability as can hornswoggle these two governments out of millions of dollars by giving him a concession of water power of such an extent that I need not attempt to enumerate it to you. I also say I have supreme appreciation of that gall which asks these two governments to go on and pay for half of what he has been given. But when he asks this intelligent body to believe that when he raises the level of a lake so as to submerge an island fifteen or seventeen feet it enhances its beauty and when he says that extending the shore line and substituting for that which, we say, is provided by an act of God, a bottom which is covered by either decaying vegetable matter or stumps of trees, no matter how short they may be made, constitutes an improvement, I think this man is excelling the assurance which he manifested when he got the concession from the government.

I have been a practicing physician for over fifty years and by education and by nature and by observation and practice and experience I have learned that in the satisfaction of life there is something besides the commercial value which has been harped upon so many times here. That branch of it which relates to beauty and recreation has found a very warm spot in my heart. I hope, as I have journeyed through life, I have actually lived by the way. A gentleman who asked a question here, who is now on the Board, asked something concerning the similarity of the border of Maine. It has been my pleasure to journey amongst those harbors he mentioned and those beautiful spots in the farther east. It has been my privilege to coast up and down our entire border on either side of this country and even abroad. I have had an opportunity of making several trips up the coast and twice in small boats to Alaska. I have floated down the Nile and I have walked through the palaces of the Sultan and I have gone through the Bosphorus. But for the satisfaction and the opportunity for recreation this very tract that we are talking about has not been excelled in any place which I have visited. I have seen lake Louise and traveled on your palatial steamers. I simply state on the reputation of a physician there is something uncanny in what has been done for the many people who have visited this district.

I myself have out of my profession saved a little which I have invested here and I have never received any concession from any government. I have earned every dollar I have made. I have invested over \$30,000 of it in this lake and that is the best investment I ever made for profit. There was no possibility of any commercial profit, but it has brought to me health and happiness and satisfaction—not selfish satisfaction, but it has brought to me the opportunity of distributing that pleasure to people who did

not have concessions from governments. I came to this lake before there was any dam anywhere. I selected the island which has been my habitation since I have been here, and some others. The beaches that are around that island and many other places that I have had an opportunity of visiting since, are submerged by the present level. My beaches are all gone. That is a government concession and I am perfectly willing to abide by it; but when you tell me there will be a benefit in any possible way to the part which I represent by raising this water one inch, I will say it is a great detriment, and I want to go on record by saying that if it is possible I would like to endorse Mr. Lenander's application. I went with Mr. Lenander before the Commission at St. Paul at the time the application for the dam was put in for Kettle falls. We were told that it would be filled with rock. I understand that it was made absolutely imperative that that be done on a complaint being made two years after the dam was in. I have travelled that lake and adjacent lakes more than once before these trees were destroyed. I have had an opportunity of hunting and fishing there and there is an abomination and desolation along there. I want Mr. Backus to have every foot of power he can get but I do not want him to destroy beautiful scenery and the opportunity for recreation. Just suppose such an impossible thing as this should happen. Right at once it probably could not; but suppose the Commission instead of granting the request and accepting the proposition, went away and made a recommendation to their respective governments that a gigantic international park should be established from the shores of Lake Superior to the Lake of the Woods. Such a thing would constitute such a great public benefit, so far beyond what will come to this great corporation that your children for generations to come will rise up and call you blessed.

STATEMENT OF MR. RALPH D. THOMAS

Mr. THOMAS. Yesterday, Mr. Backus outlined his suggestions and wishes as to what should be done with the boundary waters above the Namakan chain of lakes, and his suggestions covered, among other things, the storage reservoirs. In the case of these storage reservoirs, impounding dams will be necessary and such dams will concentrate the head and flow in such a way as to make possible the development of water power. I am representing interests who will stand ready to utilize such power if it becomes available. We believe that the amount of power will be sufficient to justify this development, but it will be justified only in case it becomes a regulated flow depending upon the storage dams rather than the natural flow which now prevails. I have prepared a statement which I will

file with the Commission and which for the information of those present I would like to read. The statement is as follows:

MINNEAPOLIS, MINN., *September 28, 1925.*

INTERNATIONAL JOINT COMMISSION,

International Falls, Minn.

GENTLEMEN: This statement is presented by Ralph D. Thomas, consulting engineer, of Minneapolis, Minn., in behalf of himself and his associates who seek to eventually avail themselves of the use of waters along the international boundary for power development, and who now respectfully petition the International Joint Commission to give due consideration to this question of future power development and its great potential value to communities and industries on both sides of the boundary.

These petitioners have for several years looked forward to the time when the development of these powers would become commercially feasible and their engineer has had occasion at various times in the past to visit some of these waters and to study their use through consideration of the data and sources of information that have been available to him. He has been actively engaged in the development of hydro-electric power for a period of several years and has in the more recent years been largely occupied in the design and construction of plants in northern Minnesota, one of which is located on the Kawishiwi river and uses water which ultimately becomes a part of the international waters under consideration. His studies and investigations in connection with this plant early convinced him that the future of hydro-developments in Minnesota lay along the northern border and on streams tributary thereto. That the possibilities of this district have been recognized by the Commission is evidenced by reference to the final report on the Lake of the Woods reference, in which they say on page 219:

"Above Rainy lake, along the international boundary and in both countries, are a number of power sites at which smaller quantities of power may be utilised as the future demand for electric energy increases. Of the smaller power sites in Canada, very little information is at present available, yet it is not looking too far into the future to see these powers used for local purposes, for mining perhaps, or for electrification of portions of the three transcontinental railways which pass through or near the Lake of the Woods watershed.

"On the United States side of the upper watershed area, a market is already in existence for all the available water powers; although the cities of Duluth, Superior, and Two Harbors, with a combined population of 150,000 are within a direct distance of 100 miles from these powers, one need look no further than the great iron ranges which lie partly within or directly contiguous to the watershed south of Vermilion lake. These undeveloped powers lie within a radius of from 35 to 65 miles from the centre of the Mesaba range. Along the international boundary, at three sites between Basswood and Namakan lakes, an average of approximately 20,000 horse power may be developed, while at four sites on the Vermilion river and one on the Kawishiwi river a total average of about 8,000 horse power may be obtained. In fact, the Kawishiwi River Power Company has already been organized to build a plant at this latter site. Certain of these power sites must, of course, await further settlement and development before dams, plants,

and transmission lines can be economically constructed, yet eventually this power will be mainly consumed in mining operations on the range, and for domestic and municipal use.

"Some idea of the future importance this power will be to one of the greatest industries of America, may be obtained when we consider the rapidly increasing use of electricity for commercial and mining purposes, and the full extent to which the available power southward from the range will soon be utilized by the growing cities of Duluth, Superior, and Two Harbors.

"In time, should the supply of pulpwood become exhausted, a portion of the International Falls power might be transmitted to the Iron range, a distance of about ninety miles, or if necessary even to the Duluth district, a distance of about 150 miles. At such time, say in fifty years, the entire arable portion of the watershed would doubtless be settled, and a considerable market for local power would be available, such as the Northern States power company has built up in southern Minnesota."

It was largely due to statements in that report, which seemed to confirm conclusions independently reached, and to a recognition of the rapid increase in electric power consumption and an indication of probable needs greatly in excess of visible resources of hydro-electric power, outside of these waters, that serious consideration has been given to the utilization of these power sites and the transmission of power to centres of industrial development. It is believed that, if the amount of power indicated can be provided continuously and dependably, it will result in stimulating further electrification of present industries and in the creation of new industries seeking cheap and reliable power.

Unquestionably, the more rapid development of available water power sites in Minnesota has been retarded by the comparative high costs of such developments, and the unreliable supply of water almost universally experienced. The wide spread between average flows, for which generating equipment is usually installed, and the low stages of dependable flow is so great as to discourage the maximum possible use of waterpower and to cause the utility companies to turn to steam power for relief, and it can be shown that the cost of power generated by steam is usually little if any greater than that developed by water on our unregulated streams and, in many instances, the cost by steam may actually be less.

The Rainy river watershed could, with the creation of sufficient storage reservoirs, sustain a regulated flow of between 8,000 and 9,000 c. f. s. at the outlet of Rainy lake and the tributary lakes and streams could each presumably sustain its share of this in proportion to the drainage area serving it. Present storage is not sufficient to sustain this flow continuously and it is believed that eventually the additional storage must be provided, if the obviously greater advantages of regulation are to be realized and if such storage is created, the power sites incident thereto should and will be developed.

Of the boundary lakes suitable for storage reservoirs, the following offer opportunities for power development to the extent noted.

Lac La Croix.—A high water reservoir level of 1,200, or about 8 feet above maximum high water mark, would create a fall between here and Little Vermilion lake of 85 feet, of which probably 76 feet could be used for power development, with an estimated output of 20,700 horse power.

Crooked lake.—From the suggested storage reservoir level of this lake at 1,260 to the normal level of Iron lake, is a fall of 40 feet, which, if developed, is estimated to furnish approximately 4,500 horsepower.

Basswood lake.—The fall from the suggested reservoir level of this lake, at elevation 1,305, to that of Crooked lake will be 45 feet, of which it is believed that 20 feet can be used for power purposes, resulting in an average of 2,000 horse power.

The estimated horse power output from these three sites, totalling 27,200 is determined on the basis of dependable regulated flow which amount is sufficient in quantity to justify development with the expectation of delivery at usable points at a lesser cost than equivalent steam power, and it is natural to expect increased industrial expansion of inestimable value to the communities thus served.

In preliminary studies of these prospective water power developments, the conclusion was early reached that they would not be commercially feasible or attractive in any way without regulation. A single example will illustrate the difference between regulated and unregulated flow and will show the absolute need of regulation of these waters.

On the Kawishiwi river, between Garden and Fall lakes, there exists a normal difference in levels of 70 feet, and a normal unregulated flow estimated to vary from an extreme minimum of 50 c. f. s. to a probable maximum of nearly 10,000 c. f. s. The minimum flow, if used under the normal available head, would produce only 320 horse power, whereas by utilizing facilities for regulation, a dependable flow of 750 c. f. s. is obtainable yielding continuously 4,775 horse power, or a difference between normal yield and low yield of over 4,400 horse power which must, without regulation, be provided from other sources if continuous service is to be assured. It is unquestionable that this plant, now completed and in operation, would never have been built unless regulated flow could be attained. Likewise the power resources of the undeveloped sites on the Rainy river watershed will be lost for years, if not permanently, without provision for regulated flow and true conservation demands their early use that cheap and dependable power may be made available.

Investigation has shown that, after completion of sufficient storage for complete regulation, the annual fluctuation of all lake levels will be materially reduced and, in fact, that the extreme variations will occur gradually over a long period of years, corresponding to the wet and dry cycles, instead of from season to season as in a state of nature.

I would like to say there was a misconception as to how these reservoirs would be used, and that is probably based upon the experience in Rainy lake and the Namakan chain of lakes as they are now operated. These lakes, as has already been pointed out, are entirely inadequate to regulate the flow of the entire watershed, and that has been admitted. With the construction of these other reservoirs on the international boundary and some of which are now being built at other points, complete regulation will be practically assured and complete regulation means conserving the water which flows in a year like 1916 and discharging it gradually over the long dry spells which may follow and that the maximum fluctuations of these lakes will occur only over a long period of years, possibly five, six, seven or eight years, instead of occurring from

season to season as is the case on the present storage lakes. The statement continues:

This condition will naturally be reflected in both Rainy lake and the Namanikan chain of lakes, which are now entirely inadequate to regulate the outflow of Rainy lake with resultant annual variations in levels greater than will ultimately be necessary. Thus will the proposed reservoirs, if built, prove beneficial to navigation, recreational pursuits, fishing and, as has already been indicated, to industry through the development of the water power which alone would fully justify them.

In the study of the proposed power development, it has become apparent that the greatest good on the upper waters will be realized only upon the consummation of complete control and regulation and, happily, this will be instrumental in assuring the desired regulation of Lake of the Woods and dependable flow at its outlet, which is eventually to become so necessary to the power sites, both developed and undeveloped, on the Winnipeg river where the low flows of the past year have so nearly approached the plant demands, and actual shortage has threatened. Unless steps are early taken to provide the highest possible dependable flow by regulation for these plants, a recurrence of a dry cycle will doubtless find them inadequately supplied with water and ultimately, following the absorption of all power available from natural flow, facing the necessity of seeking other power sources.

With an increased dependable flow, the present plants, perhaps enlarged as required, will provide more power per dollar of investment than could otherwise be provided and future developments could be made at a lesser cost per unit of power installed, with resulting lesser cost per unit of capital. These economies would seem to justify a participation by the beneficiaries in sharing some of the costs of regulating reservoirs jointly with the power interests on the upper river. Such participation would naturally be only in proportion to the actual benefits received from regulated flow as compared with natural flow.

It is assumed that the cost of power developments, solely, to be made on the upper river, as herein discussed, will be defrayed by the owners, who will further be willing to pay their proportional cost of the storage reservoirs, such cost to be determined by the accruing benefits, and bearing its proportion to all benefited interests.

We are not asking to have anything given us other than the right to use this water which we believe should be stored and regulated. When it comes to the actual cost of development for power, we stand ready to pay those costs ourselves. By that I mean such costs as are directly chargeable to the power development.

Mr. SELOVER. Are you also willing to pay anything for the use of the power other than the mere putting in of the dam?

Mr. THOMAS. You mean for the use of the water?

Mr. SELOVER. Yes.

Mr. THOMAS. We would expect to pay for the use of the water in paying those costs. We propose to pay our proportion of the cost.

Mr. SELOVER. Nothing beyond that for the use of the water for all time to come?

Mr. THOMAS. Simply for the costs. That is the rule in Minnesota in all power developments.

Mr. POWELL. Whom do you include in the term "we" you use?

Mr. THOMAS. My associates who have been negotiating for some time for the use of these power sites with Mr. Backus.

Mr. CLARK. That is not the rule at the Soo, is it?

Mr. THOMAS. I said, in Minnesota.

Mr. CLARK. I said it is not the rule at the Soo, is it?

Mr. THOMAS. I believe not.

Sir WILLIAM HEARST. That is, in the State of Minnesota where the state owns the power, it exacts no compensation of any kind for the use of the water from the party developing it.

Mr. THOMAS. I believe the state owns no developed water powers in Minnesota.

Sir WILLIAM HEARST. I am speaking of the sites where power may be developed. Whoever owns the privileges that are necessary to be acquired to develop the power, state or federal authority, or private individual as the case may be.

Mr. THOMAS. All developments in Minnesota, so far as I know, have been made by private corporations on lands owned or controlled by them. The privilege of using the power runs with the riparian rights.

Mr. BACKUS. I think Sir William Hearst has the question of the power site in view. If the site is on state owned land, does the state exact any compensation for the use of the water from the party developing it?

Sir WILLIAM HEARST. In the Province of Ontario we charge a rental per horse power to the man who develops the power.

Mr. THOMAS. I believe there are no such cases in Minnesota.

Mr. SELOVER. You do not propose to pay anything per horse power for the development?

Mr. THOMAS. That is the case.

Mr. McCUMBER. But you would expect to have the Commission or some other power exercise themselves in the matter of fixing your charges per horse power?

Mr. THOMAS. Absolutely.

Mr. McCLEARN. Is it not true there is no such regulatory authority in Minnesota?

Mr. THOMAS. There is none at present.

Mr. McCLEARN. Is it not a fact that the highest rate charged for power anywhere in the United States is that charged to Minnesota.

Mr. THOMAS. I can not answer that question because I do not know.

Mr. McCLEARN. You are basing your request for permission to use this water power on two grounds, if I understand your report.

Mr. THOMAS. We are not asking for permission to use the water power. We are asking for consideration of this valuable thing by the Commission in considering the storage and regulation of these waters.

Mr. McCLEARN. But you are doing that merely preliminary to entering into negotiations with Mr. Backus' company to be allowed to use the power that would be developed from storing this water in this chain of lakes. Is that true?

Mr. THOMAS. Yes.

Mr. McCLEARN. You have not disclosed, and I do not suppose you care to disclose whom you represent?

Mr. THOMAS. Not except in a general way.

Mr. McCLEARN. You base your suggestion to the Commission to use these reservoirs, if they should be established, on the ground first, of necessity, because of the need for power and light in Duluth, Superior, Two Harbors.

Mr. THOMAS. I did not so distribute it. I was quoting from the Commission's final report in the Lake of the Woods reference when those cities were mentioned.

Mr. McCLEARN. I presume you adopt those as your own in your presentation to the Commission at the present time?

Mr. THOMAS. I merely quoted that to show that the Commission had recognized previously a possible market and the need for the development of power.

Mr. BACKUS. Would it not be a good idea to let Mr. Thomas finish his report?

Mr. McCLEARN. I beg your pardon. I assumed he was through.

Mr. THOMAS. The statement continues:

No attempt has been made to estimate the value of such regulation to the undeveloped power on the upper river, but the proponents feel that they will be justified in accepting the obligation to pay such costs as may be assessed against the benefited sites in which they are interested.

Reference has been made to navigation, and in this connection it might be proper to refer to this question and the efforts being made to accomplish it elsewhere in Minnesota. For many years the people have been trying to establish dependable navigation on the upper Mississippi river and Congress has appropriated vast sums of money, which have been spent in deepening channels, and providing storage reservoirs for regulation. A keen appreciation of the benefits to be derived from water transportation is now felt by shippers and great pressure is being brought to bear on Congress and the army engineers who direct the expenditures of funds appropriated for these improvements, to hasten the completion of work necessary to ensure dependable navigation. Only last week, the Chief of Engineers, Major General

Taylor, visited the Twin Cities and the upper Mississippi river and attended many meetings where prominent business men of both cities appeared to show the need of river improvements, and to urge their early completion in order that the communities tributary to the river may be better served.

Navigable channels can only be maintained by dredging and by regulation from storage in order that the flow may be sustained during low water periods. To accomplish complete regulation on this river by storage is difficult because of the limited storage basins now available and because of their remoteness from the point where such regulation is most needed. Had the need of such storage been recognized years ago when facilities could have been provided at a lesser cost, it would have been of great aid in the solution of the present problems.

The whole upper Mississippi valley is now fully aroused to the imperative need of using the river for this purpose and as a result of the present agitation, dependable navigation will doubtless be established on the upper river at some near future time similar to that on the lower river, where, with the Ohio and Monongahela rivers which are a part of the system, the total annual tonnage handled is equivalent to the entire tonnage hauled by the Southern Railway.

It may be of interest to know what the federal government has done in providing storage for regulation on the upper Mississippi river. There are six storage reservoirs, with a combined capacity in excess of 96,000,000,000 cubic feet, which were constructed at a cost of approximately \$1,670,000. These reservoirs have been in operation for many years and are fulfilling their purpose within their limitations very satisfactorily. The maximum variations in lake levels vary from $7\frac{1}{2}$ feet to 16 feet, and it is claimed that these bodies of water are much better recreationally and scenically than in a state of nature.

I have been personally on two of these lakes this summer, Leech lake and Pokegama lake. In spite of the fact that both of these lakes at the time of my visit were very much below the normal water level, one was not conscious of that fact, either from the appearance of the shores or from the appearance of the water. The impression created was that the lakes were in a natural state and one was not at all conscious of the fact that they were drawn down several feet as they were.

Mr. BACKUS. What did you say the difference in levels was in these lakes?

Mr. THOMAS. From $7\frac{1}{2}$ feet to 16 feet.

Mr. BACKUS. The government storage?

Mr. THOMAS. Yes.

Mr. BACKUS. On which lakes?

Mr. THOMAS. I can give you that. I have here a copy of a bulletin issued every ten days by the United States engineering office at St. Paul referring to reservoirs at head waters of the Mississippi river. This shows the possible variation in lake levels on the six reservoirs. The maximum on Leech lake is 5.74 feet. The maxi-

mum on Pine river is 16.15 feet. The others vary from 6 feet to 14.20 feet.

Reservoir	Gauge		
	When Empty	When Full	Water Surface Variation
Winnibigoshish.....	0.00	14.20	14.20
Leech lake.....	0.00	5.74	5.74
Pokegama.....	4.50	12.00	7.50
Sandy lake.....	1.60	11.00	9.40
Pine river.....	2.35	18.50	16.15
Gull lake.....	1.00	7.00	6.00

Mr. BIRKMAN. What lake is that with the variation of 14.20 feet?

Mr. THOMAS. Lake Winnibigoshish.

Mr. BIRKMAN. Did you ever see the tamaracks sticking out of the water?

Mr. THOMAS. I have not been there for twelve years. The statement continues:

Further improvements on the upper Mississippi river are now being investigated by the army engineers and it has been stated in the public press that they are making plans for the construction of a navigation dam on the river in the vicinity of Prescott, Wis., which will provide a slack water navigation channel to a depth of six feet, extending up to the present navigation dam situated between St. Paul and Minneapolis. This dam, if built, will doubtless cost several million dollars and although it will be primarily for navigation purposes the question has already been raised as to the possibility of developing water power in a manner similar to that at the existing navigation dam, where power rights have been leased for a long term of years to Henry Ford.

Thus is evidenced the need and value of regulation for navigation on Minnesota water and the feasibility of utilizing power sites incident thereto.

Respectfully submitted,

RALPH D. THOMAS.

Mr. MAGRATH. Assuming that your associates erected a steam plant at Duluth; at how much more would you have to sell your power than if you were permitted to develop the power in this international reach? Do you understand what I mean?

Mr. THOMAS. Yes; I understand your question, I believe. Do you mean in a natural state?

Mr. MAGRATH. Supposing your associates were permitted to develop power as you have been suggesting along the international reach, and then supposing you were to produce power through steam plants at Duluth. How much cheaper then could you sell your product from your water development than from your steam development? What will the saving be to the consumer per horsepower?

Mr. THOMAS. I am not prepared to answer that question specifically, but I do know that it would be very material.

Mr. MAGRATH. Have you a rough idea?

Mr. THOMAS. I do not know that I ought to embarrass the power interests who are operating at Duluth by giving any such opinion arrived at on the spur of the moment.

Mr. MAGRATH. You are not prepared to say what it would cost you to create power by steam at Duluth?

Mr. THOMAS. Steam power could probably be created at Duluth for considerably less than one cent per kilowatt hour, and water power on these regulated streams could be developed at a much lower cost than that.

Mr. McCLEARN. There is a power plant at Duluth now, is there not, Mr. Thomas?

Mr. THOMAS. A steam power plant?

Mr. McCLEARN. A steam plant supplying electric current to the industries of the city.

Mr. THOMAS. Do you mean a generating plant at Duluth?

Mr. McCLEARN. Yes.

Mr. THOMAS. I believe there is an antiquated steam power plant at Duluth, but they get most of their power from plants outside of Duluth.

Mr. McCLEARN. You are familiar with the Minnesota Light & Power Company operating at Duluth, are you not?

Mr. THOMAS. I understand there is such a company, yes.

Mr. McCLEARN. You know that they supply Duluth and Superior with electric current for lighting and heating purposes and industrial use and the running of electric cars, etc., do you?

Mr. THOMAS. Yes.

Mr. McCLEARN. They have power plants on the St. Louis river at Fond du Lac and at Thompson, do they not?

Mr. THOMAS. Yes.

Mr. McCLEARN. And they have their steam plant in the city of Duluth with which they supplement their power plants. You are of the opinion that electric current could be made by steam for one cent per kilowatt hour?

Mr. THOMAS. In the modern steam plant the fuel costs would not exceed that. Of course, there are many other costs entering into the production and distribution of electrical energy.

Mr. McCLEARN. But referring to Commissioner Magrath's question, the difference in the cost would not exceed one-half cent per kilowatt hour, would it, whether you got it by water power or by coal?

Mr. THOMAS. Yes; it might exceed that.

Mr. McCLEARN. Well, approximately, that would be a fair estimate?

Mr. THOMAS. I would say that the difference would not exceed a cent.

Mr. McCLEARN. In view of the fact that there is this water power development on the St. Louis river, that it is already developed, and that the cities of Duluth and Superior are now being served from that, would you say that there was any necessity for tapping these lakes to supplement the power development on the St. Louis river?

Mr. THOMAS. Absolutely.

Mr. McCLEARN. To get away from the half cent additional cost in creating the current by steam? Is that your thought?

Mr. THOMAS. If power can be developed from water it should be encouraged.

Mr. McCLEARN. Yes; but we are speaking now of the two cities that you mentioned, Duluth and Superior. They are now being supplied with electric current for the most part by water power developed on the St. Louis river? Is not that true?

Mr. THOMAS. No; I can not say that it is. They have two plants on the Mississippi river and one on the Gassaway river, and I do not know how much power they are getting out of the different plants, so I cannot answer your question. As to whether or not they are getting the majority from the St. Louis river, my impression is that the St. Louis river has been very deficient in water this year, and quite unable to furnish power that these plants would ordinarily be expected to supply.

Mr. McCLEARN. These plants that you mention on the Mississippi river, Mr. Thomas, are used primarily for supplying electric current to Grand Rapids and to towns such as those you mentioned here a while ago, those along the Missabe range?

Mr. THOMAS. I am not connected with the Minnesota Light & Power Company and I know nothing of the details of the distribution of their energy. I know in a general way that their plants are all tied together, that the stations supply the power and that it goes into the larger system and is distributed to the cities wherever they may be located. I do not know about the distribution of the power from the Mississippi river as against the distribution from the St. Louis river.

Mr. CLARK. The Commission hopes that these interrogatories will not take too wide a range. We are consuming a great deal of time on matters that are not closely connected with the inquiry. I think we all understand that water power is cheaper than steam power for the production of electricity.

Mr. McCLEARN. Does the Commission understand that these cities are at present being supplied with current from the St. Louis and Mississippi rivers by a company—

Mr. CLARK. Go ahead, sir. I have just indicated that the inquiry was taking a pretty wide latitude.

Mr. McCLEARN. All right. I have no further questions.

Mr. ELMQUIST. Mr. Thomas, with what firm are you connected in Minneapolis?

Mr. THOMAS. I am the head of my own firm. I am a consulting engineer.

Mr. ELMQUIST. How long have you been located there?

Mr. THOMAS. Twenty-four years.

Mr. ELMQUIST. How long have you been studying hydroelectric power matters?

Mr. THOMAS. For about the same length of time.

Mr. ELMQUIST. Do you devote most of your time to that particular question?

Mr. THOMAS. I do.

Mr. ELMQUIST. Have you personally investigated the power resources of the international boundary waters?

Mr. THOMAS. I have.

Mr. ELMQUIST. How long have you been engaged in that study?

Mr. THOMAS. My first contact with this section in the interest of power development was about fourteen years ago.

Mr. ELMQUIST. What investigation did you make at that time?

Mr. THOMAS. I visited lake Vermilion and the Vermilion river.

Mr. ELMQUIST. That is outside of the international boundary?

Mr. THOMAS. Well, it is water flowing into the international boundary, and from that my attention was directed to the international waters.

Mr. ELMQUIST. Did any power development result from that investigation?

Mr. THOMAS. No.

Mr. ELMQUIST. When did you next do anything?

Mr. THOMAS. My next immediate contact with the international waters, or tributaries thereto, was about three and a half years ago.

Mr. ELMQUIST. What lakes did you then investigate?

Mr. THOMAS. That is when I investigated the Gassaway river and the power development which has since been made at Winton.

Mr. ELMQUIST. There is power developed in the Gassaway now?

Mr. THOMAS. There is.

Mr. ELMQUIST. Were you identified with that corporation?

Mr. THOMAS. I did the engineering work.

Mr. ELMQUIST. Have you made any more recent study of the international waters that are involved in this inquiry?

Mr. THOMAS. Since that time I have been continuously interested and have been seeking every opportunity to familiarize myself with the international waters because I then became convinced as I pointed out in my statements, that in this section there was the only feasible power development.

Mr. ELMQUIST. You have given figures here of possible power development along Lac LaCroix, Basswood lake and Crooked lake. Were those deduction arrived at from your own investigation or were they taken from figures that have been given you by some one else?

Mr. THOMAS. This information was furnished me by Mr. Backus' engineers.

Mr. ELMQUIST. So you have just taken the work of Mr. Backus' engineers and applied your own deductions?

Mr. THOMAS. Not at all. My previous knowledge of the situation gave me some information.

Mr. ELMQUIST. Yesterday Mr. Backus stated that he had been negotiating with you about the sale or lease of these power resources. Over how long a period have those negotiations continued?

Mr. THOMAS. I should say just a year ago next month when that first came to my attention.

Mr. ELMQUIST. Are those negotiations represented by an exchange of letters and communications?

Mr. THOMAS. Not with me personally.

Mr. ELMQUIST. In those negotiations whom were you representing?

Mr. THOMAS. I do not think it would be wise to disclose that at this time. It would be prejudicial to the interests that I represent.

Mr. ELMQUIST. Do you believe that in an investigation of this magnitude you should come before this joint government commission and present facts about the development of power and the possible purchase of power without disclosing whom you represent?

Mr. THOMAS. I think we are fully justified in asking for the consideration of these power possibilities at this time, and before these hearings are concluded I shall stand ready to make more definite statements if it becomes necessary'

Mr. ELMQUIST. Why not do it right now?

Mr. THOMAS. It may be prejudicial to the interests that I represent to do that. The power situation is such all over the country that capital seeking investment cannot always show its hand.

Mr. ELMQUIST. You are not here on your own initiative at all but are representing some one else?

Mr. THOMAS. I have not sufficient capital to undertake a thing of this size.

Mr. ELMQUIST. Mr. Chairman, every one here has disclosed whom he represents. This is a full, fair and open inquiry. It does seem to me that it is fair that this gentleman disclose just whom he represents in this matter.

Mr. CLARK. I think we will have to leave it to the conscience and discretion of the witnesses as to what they shall disclose and what they shall not disclose, believing their evidence to be of such value and substance as we shall finally determine. We have no right to demand disclosures.

Mr. ELMQUIST. Of course, you have a perfect right to disregard evidence of any one who comes here without disclosing whom he represents.

Mr. CLARK. Absolutely.

Mr. ELMQUIST. Then, I ask that you strike from this record the testimony produced by this gentleman.

Mr. CLARK. We may disregard it, but we will not strike it from the record.

Mr. ELMQUIST. Mr. Thomas, in these negotiations have you represented Mr. Backus?

Mr. THOMAS. No; I have not.

Mr. ELMQUIST. The General Electric Power Company?

Mr. THOMAS. By process of elimination you might arrive at whom I am representing, so I shall refuse to answer questions along that line.

Mr. ELMQUIST. Well, I think it is entirely satisfactory up to the present time.

Mr. BACKUS. Mr. Chairman, I suggest to Mr. Thomas that he have accompanying his letter the various levels of the upper Mississippi reservoirs showing these fluctuations. As I remember it, Mr. Thomas, you read that from a separate slip.

Mr. THOMAS. Yes.

Mr. BACKUS. Let me suggest that you put the variations of those storage dams and the variations of levels that you read from that slip in your letter. Will you do that?

Mr. THOMAS. I cannot submit this as evidence, but I will make a copy of this portion and attach it. I will see that it is filed this afternoon.

Mr. BACKUS. Did you secure that from the War Department?

Mr. THOMAS. Yes; that is, I received this bulletin only ten days ago and it is a part of my permanent record.

Mr. CLARK. All right; then you will attach that and make it a part of the record.

Mr. POWER. Mr. Chairman, I would like to be permitted to ask Mr. Thomas a question. If these power plants are developed, Mr. Thomas, is it the intention of your associates to run a line to the Missabe range to sell power to the mining people and the people who want to consume it there?

Mr. THOMAS. That is being considered most seriously.

Mr. POWER. You are not in a position to say definitely whether they will do that or not?

Mr. THOMAS. That is a possible outlook that is being considered at this time.

Mr. LOMMEN. You are cognizant of the fact that on the Missabe range today, the field in which you hope to sell your product, there are two types of electric power being consumed, namely, steam generated power and hydro-electric power, are you not? You know that it is a matter of history and record that there is absolutely no variation between the cost of industrial production between those two forms of power today; that it is costing just as much for hydro-electric generated power as steam power, and that there is no state regulatory law which requires any check on what the producer of power may sell it for? You understand that there is no advantage accruing today in that field in which you propose to operate; that there is no advantage being derived on account of hydro-electric power?

Mr. BACKUS. Perhaps we will get up some competition here then.

Mr. LOMMEN. I would like to have my question answered.

Mr. THOMAS. Your question is rather involved, but, as I understand it, you mean to bring out this point, that the company now serving these communities to which you referred generates power by steam and by water power?

Mr. LOMMEN. That is correct.

Mr. THOMAS. And that it does not differentiate in its sale between those classes of power?

Mr. LOMMEN. Yes; and I understand you to say that the hydro-electric can be purchased cheaper than the steam generated power.

Mr. THOMAS. Yes; but in building up a rate schedule there are many items to be taken into consideration other than the cost of power, and I am not here to argue for the Minnesota Power & Light Company in defending its rate schedule. This water power if developed will provide continuously a large amount of power at a low cost, and if the price is not reduced one cent the community still benefits by having this large amount of power made available; but I will go further and say that if this power were carried into the range I think the price would be somewhat less than it is now.

Mr. LOMMEN. There is no assurance of that and the public interest can only be subserved by cheaper power rates.

Mr. THOMAS. No; the public interest is conserved by the production of cheap power. It must not necessarily be cheaper, but cheap power is going to be beneficial to the public interests.

Mr. LOMMEN. There is no noticeable shortage of power on that range that you speak of? There has been an adequate supply of power there?

Mr. THOMAS. There has been threatening an actual shortage. During the past year, I am informed that there has been a great difficulty in sustaining the necessary output to protect the communities served.

Mr. LOMMEN. I think you are entirely erroneous in that statement, but, nevertheless, getting back to the variation in the cost to the consumer of your water power and your steam power, is it not a fact that from local conditions right here at the dam manipulated by the Backus interests the cost to the consumer of power generated by water going over the dam from these international waters bears a higher cost to the consumer than in any other part of the State of Minnesota, and it is approximately ten cents higher as against as low as two and a half and three cents on the Missabe range where it comes from steam?

Mr. THOMAS. I live in the vicinity of Minneapolis and I pay eleven cents.

Mr. LOMMEN. Well, it is ten cents here and it is two and a half cents down on the range coming from a steam plant.

Mr. THOMAS. I am not familiar with the local rates.

Mr. POWER. May I ask you where it is two and a half cents?

Mr. LOMMEN. At Biwabik. There is a profit realized by the jobber. The amount received by the power company is less than two and a half cents.

Mr. BACKUS. Mr. Lommen, this is getting into a general discussion here, and I beg your pardon for it, but what is the light rate in Biwabik?

Mr. LOMMEN. The light rate has never been over seven cents. Naturally, concessions are made to power purchasers because power users will maintain a uniform amount during the day and night; and that accounts for the variation in rates.

Mr. PREUDHOMME. You said, Mr. Thomas, that the storage benefits were on the lower Winnipeg river.

Mr. THOMAS. Yes. I did not think it was necessary for verification other than that which I found in the report of the International Joint Commission on the Lake of the Woods reference and coupled with that information gathered since then which indicated that this regulation would tend to increase the dependable flow at the outlet of the Lake of the Woods.

Mr. PREUDHOMME. Do you know what the additional storage will amount to?

Mr. THOMAS. I do not understand your question.

Mr. PREUDHOMME. There is a certain amount of storage here in Rainy Lake now. Do you know what additional storage there will be according to the scheme which is proposed?

Mr. THOMAS. That was submitted by Mr. Backus yesterday.

Mr. PREUDHOMME. Sixty-one billion additional? Is that correct?

Mr. THOMAS. I can give it to you as it refers to these lakes.

Mr. PREUDHOMME. You do not know any more?

Mr. THOMAS. Solely on the lakes above Namakan.

Mr. PREUDHOMME. You have confined your investigation to the lakes above Namakan?

Mr. THOMAS. I have.

Mr. PREUDHOMME. That is only twenty-seven billion, is it not?

Mr. BACKUS. Sixty-one billion above Namakan.

Mr. THOMAS. Yes; sixty-one billion above Namakan lake. Namakan lake and Rainy lake, as I understand it, remain as they are.

Mr. BACKUS. No; not Rainy but Namakan.

Mr. PREUDHOMME. Give me details on that sixty-one billion.

Mr. THOMAS. Twenty-seven on Lac LaCroix, about eight on Crooked lake, seven on Basswood lake and twenty on Saganaga lake.

Mr. PREUDHOMME. Can you give me the ranges on each one of those?

Mr. THOMAS. Seventeen feet on Lac LaCroix, thirteen feet on Crooked lake, five feet on Basswood lake, and the range on the other one I do not recall because that never came into my studies.

Mr. PREUDHOMME. You have not verified the sixty-one billion, then.

Mr. BACKUS. What is the range on Saganaga?

Mr. THOMAS. Fifteen feet on Saganaga.

Mr. WILSON. Mr. Thomas, how is it that the power from the same hydro-electric dam here is ten cents on this side of the river and one cent on the other side of the river?

Mr. THOMAS. I cannot answer that question.

Mr. WILSON. Neither can I.

Mr. BACKUS. That is one of the questions that you forgot to ask me.

Mr. WILSON. I have not yet closed with you, Mr. Backus; I will put it up to you again. I am going to give you the second barrel by and by.

Mr. SCOVIL. How much do you figure the ten foot flow will be increased from the Lake of the Woods?

Mr. THOMAS. I have not figured what the increase will be from the Lake of the Woods because I have not had sufficient information. I have not considered that as a part of the question I had under study; but whatever increased regulated flow can be produced at the outlet of Rainy lake will be reflected in the flow at the outlet of Lake of the Woods.

Mr. SCOVIL. It would not necessarily be the same?

Mr. THOMAS. It would not necessarily be the same because it would depend upon the manipulation in the Lake of the Woods, but it should be the same.

Mr. PREUDHOMME. Mr. Thomas, would you mind giving me the different elevations at which you would get those different storage results?

Mr. BACKUS. He has adopted our schedule with reference to it.

Mr. PREUDHOMME. I was not able to get it from you, Mr. Backus. I wish to get it now.

Mr. BACKUS. How would it do if I gave you a copy of that letter with all that information in it?

Mr. PREUDHOMME. But you have stated, Mr. Backus, as a matter of fact, that you did not know the lower elevation. You must have computed something, however, to get your estimated storage, and I want to get your computation.

Mr. THOMAS. The storage available is based on these maximum levels.

Mr. PREUDHOMME. What is the minimum?

Mr. THOMAS. The minimum level is the present ordinary water.

Mr. PREUDHOMME. Give it to me for Lac LaCroix.

Mr. THOMAS. Eleven eighty three on Lac LaCroix, on Crooked lake 1,245 to 1,260; on Basswood 1,300 to 1,305; Saganaga 1,432 to 1,447.

Mr. PREUDHOMME. You say there were from 8,000 to 9,000 cubic feet at Rainy lake?

Mr. THOMAS. It will be increased to between 8,000 and 9,000.

Mr. PREUDHOMME. But in order to do that must you not have a contemplated storage in Rainy?

Mr. THOMAS. Yes; it includes the storage in Rainy.

Mr. PREUDHOMME. Well, what is that storage?

Mr. THOMAS. I do not know. I have simply taken the figure which I got from the report referred to, and my information which I have gathered would lead me to believe that the regulated flow could be raised to 8,000 or 9,000 second feet.

Mr. PREUDHOMME. You have not satisfied yourself as an engineer?

Mr. THOMAS. No; because that was not my problem.

Mr. CLARK. Are you through, Mr. Thomas?

Mr. THOMAS. I am.

Mr. CLARK. Mr. Wilkie, we will let you take the floor now and we will then take a recess so you will be prepared to go on after the recess.

Mr. POWER. Before Mr. Wilkie proceeds I would like to make a statement immediately following the recess, if the Commission is going to recess at this time.

Mr. CLARK. Is it a long statement, sir?

Mr. POWER. No; I do not think so. It may be developed into some length because of questions.

Mr. CLARK. Go ahead right now, sir.

STATEMENT OF MR. V. L. POWER

Mr. POWER. For some twenty-five years I have lived on the Missabe range at Hibbing. It seems from the hearing we have been having that they have jumped over from International Falls to the cities of Duluth and Superior in giving consideration to the possible development of power.

I am here in the interest of no one except the citizens of the village of Hibbing and not all of those citizens, but those who have discussed the possibility of a development that would be advantageous to the Missabe range.

The Missabe range is about 100 miles long, running almost due east and west. It lies about midway between the Canadian border and the city of Duluth. Across that range there are millions of tons of iron ore, some of it of an inferior grade, and by reason of the cost of transportation must be placed in storage piles in millions of tons. It cannot be shipped because of the cost of transportation. It has been the hope and the dream of the people down there that we might develop smelters and other plants of that nature that would help in improving the material that is taken from the ground and thus give employment to thousands of people. For those members of the Commission who are not familiar with the Missabe range I wish to say that there are practically 150,000 people living there and making their homes across the range. I came here at the solicitation of many of the citizens across the Missabe range for the purpose only of listening to what might be said with the thought possibly of something developing out of this proposition that might be advantageous to those billions of tons of iron ore.

I have traveled personally through all of these lakes by canoe and otherwise. I know their beauty and I am appreciative of the possible damage that might be done to the shores of these lakes and

to the islands and the destruction of their beauty, and I am sorry if the Missabe range is going to cause any injury to those things because they are so vitally interested in keeping them in their present status, but they are more vitally interested in the development of the situation which will be advantageous to a greater group of people who are living across that range.

I want the Commission to understand that I am here representing no interest. I do not know Mr. Backus or Mr. Thomas. I do not know any of these companies that might develop this power, but I do say that the general result will be that we will get cheaper power. That is likely to produce a situation on the Missabe range that will develop those millions of tons of iron ore for the advantage of the people not in the city of Duluth nor in the city of Superior but the people who are actually making their homes along that Missabe range and for the benefit of the people who are employed at the mines.

Now, let us see what this might result in. I do not mean the suggestion made by Mr. Backus or Mr. Thomas or any other individual or company, but I am referring to the possible development as a suggestion to this Commission in their consideration of the necessity of creating these storage plants.

If we can get on the Missabe range electricity sufficiently cheap to melt the iron there we will get away from the necessity of transporting that material from the Missabe range to Pittsburgh, Gary, and to other places where people are now getting the benefit of the employment in connection with that work.

We will utilize those millions of tons of iron ore that are being deposited across this range that cannot now be utilized because they are not sufficiently high in metallic substance as against the other ingredients that make up a ton of iron ore. Today we ship a ton of iron ore to the city of Duluth and in round numbers it costs one dollar. From there we ship it to the eastern ports or to Gary, Ind., and it costs in round numbers two dollars. We take that iron ore out of the ground and ship it as 2,000 pounds. When it arrives at the smelter and is put through its first process of development into the improved product it weighs only 1,000 pounds. So that fifty cents in the way of transportation from the Missabe range to Duluth is lost. One dollar from Duluth to the eastern ports is lost. If we can develop a situation that will produce electricity sufficiently cheap to run the smelters along the Missabe range it is going to bring about the utilization of that ore of a lower metallic content than can now be profitably used by reason of the fact of that excess expense in transportation, and we believe that from that situation there can be developed one that is beneficial to the State of Minnesota and to the

several counties, some of which are impoverished by reason of the debt they have now.

Besides promoting taxes and development for the people that live along the Missabe range, it will result in an ultimate development of the territory that is beneficial for agricultural purposes.

While we deeply appreciate the fact that it might destroy some of the beauty along the border line, we want to ask the Commission to make a comparison of the damage sustained by reason of that situation with the advantages that we might receive as a result of such a development.

Of course, we expect that this Commission is going to take into consideration the fact that there is the possibility of some one developing cheap power and that they are going to retain control of the public domain to such an extent along this border that they can regulate rates and dictate what the public shall pay in a general way for the power that is developed here. It is a public utility, and if this Commission is handing over to some one the right to use the power that is developed, they can also retain control to such an extent that they can dictate the rates that will be paid for this electricity, and thus develop a situation where the public is not handing over some of its value to some one who is going to use that to the advantage of some individual or some particular person or corporation as against the general public. Believing that this Commission would have in mind the thought that the power that is developed here is to be developed for the benefit of the public, and the thought that it is possible that such development might come to the Missabe range, I want to say to you, keep in mind the duty that has been delegated to you in connection with these lakes and do everything that is within your power to preserve that situation. Bear in mind also the fish and other things that are decidedly advantageous to the public and do everything that is within your power to preserve that situation in status quo. But have also in mind the fact that there may be developed from this particular situation as previously suggested a situation that will be far more advantageous than the preservation of those particular things that have been presented here.

I came here only to listen, but since it has developed that there may be a great amount of power carried to the Missabe range, I feel it my duty to present here this particular statement. Please keep in mind the beauty of these lakes; keep in mind the preservation of the fish life and other things that are there; but also in behalf of the people up and down the Missabe range I ask you to be good enough to keep in mind what might develop as an advantage to a great majority of the people as compared to those who might derive benefit from other sources.

I thank you very kindly.

Mr. HILLMAN. Mr. Power, how many millions will you develop on this great iron range to compare with the devastation that would be made of this great playground of a nation?

Mr. POWER. Mr. Hillman, I am not in a position to say whether it will develop one pound or one ton. I am merely asking the Commission to take into consideration that particular phase of a serious proposition to the people and if it is not practicable the Commission itself will so decide.

Mr. CRAIG. Mr. Chairman, just a word before you take a recess. You have called upon my learned friend Mr. Wilkie presumably to present his case for the Canadian National Railways. He has renewed the statement that he made to the Commission yesterday, that it will probably take him two days to present his case. There are a number of us here from Manitoba and we would like to exercise discretion as to whether we shall remain here to hear the completion of Mr. Wilkie's presentation. In that event it would be an advantage to the Manitoba interests if they could be heard before Mr. Wilkie begins. It will not take us very long; I should say at the most one hour to present our case.

Mr. CLARK. We want to accommodate everybody as far as we can and would be glad if Mr. Wilkie and you could arrive at an amicable adjustment of that difficulty.

Mr. CRAIG. I think Mr. Wilkie and I had arrived at it this morning.

Mr. WILKIE. No, no.

Mr. CLARK. I think that Mr. Wilkie, since he is going to take two days to present his case, could be induced to give way to you, Mr. Craig, for an hour or two this afternoon.

Mr. WILKIE. Mr. Chairman, I have heard these pleasant voices that say an hour or two before, and probably you have also. The hours grow.

Mr. CLARK. Suppose we take a chance on him, Mr. Wilkie?

Mr. WILKIE. Personally I would like to do that, but the officials of the Canadian National Railways are at the present time operating a road at its utmost capacity in order to get the wheat crop out. I have a number of men here ready to testify. This is a serious matter with us.

Mr. CLARK. We held a session last evening and it was thought that we would not hold one this evening, but in view of what Mr. Craig said, we will hold one this evening for as many hours as Mr. Craig consumes this afternoon so that you will not be losing any time.

Mr. WILKIE. All right, Mr. Chairman, on your own head be it.

MR. CRAIG. You spoke of hours. I think I can give assurance now that it will not exceed one hour.

(Thereupon, at 12.30 o'clock p. m., the Commission took a recess until 2 o'clock p. m.)

AFTER RECESS

The Commission reconvened at 2 p. m.

MR. CLARK. Mr. Craig, before you take the floor, I want to call upon Mr. Mica who will take perhaps five or ten minutes and accommodate him as he is going away from the building.

STATEMENT OF MR. E. J. MICA

MR. MICA. I come here, gentlemen, officially representing no one but am a taxpayer of my community and one vitally interested in the development of anything that would mean the development of my community. I have therefore been interested in the proceedings to date. Several points have come up that to me have appealed particularly. One was the question of the development in the marketability of electricity. As a member of the governing body of my village and having served in that capacity for the last six years, I can readily appreciate the need of electricity as far as commercial and domestic development in my community is concerned. As an example, we are at the present time expending approximately \$200,000 for a new unit to our steam electric plant. This has been a serious question and one that has been given a great deal of consideration by the village government as to the feasibility of this extension. Running along a good many lines, we appreciate the fact that we could go out and in a sense buy power cheaper than we could generate it by the use of coal. There was just one question that caused us to approve this expenditure and that was the question of a reliable source of current. The Minnesota Power and Light Company who supply a considerable number of the communities on the range and some of the mines, have been seriously pressed from time to time. I do not say this officially; I am not connected with the company, but my connection with the Village of Hibbing gives me the information. Last year in the village in the off-load we sold them no less than 20,000 horse power current to help them to maintain the general degree of efficiency that a public utility desires to maintain. There is the question of future commercial development that is possible. Some of that was touched upon by my fellow-townsmen in connection with the development of the lean ore formation. That is true, not only in Hibbing, but I believe my friend from Two Harbors will substantiate my statement that in Lake county there lie millions of tons of magnetite ore

that, if it could be reached with a reliable source of electricity, could be developed to the benefit of the community.

I am a member of the Izaak Walton League, the Kiwanis Club, the Commercial Club of Hibbing. All these three bodies have, in cooperation with the general development of the Arrowhead district, presented your body with petitions asking your fair consideration of the question at issue. I have been a lover of the outdoors from the time I was able to get out in the fields with a gun. I fully appreciate the beauties of this country and do not want to see them disturbed to any great extent. I feel that your body, after due and full consideration, will appreciate the fact that the beauties of this country can in a general sense be maintained and the good derived from a development of the power more than offset what harm may be done. At the same time, I would request that in giving this development consideration you endeavor as much as possible to keep in the control of your Commission the entire development of this project, maintain it at whatever cost you can for the good of the people, and I feel sure the benefits derived from the direct supervision of it by your honorable body will more than offset any of the harm done by the obstructed waterway.

Mr. CLARK. You are a member of the governing body of the village of Hibbing?

Mr. MICA. Yes.

Mr. CLARK. How large is the village?

Mr. MICA. Eighteen thousand.

Mr. CLARK. What is the assessed valuation of your village?

Mr. MICA. Approximately \$69,000,000.

Mr. CLARK. You are not having very much trouble there in carrying on your ordinary running expenses?

Mr. MICA. We try to maintain a standard, perhaps a little higher than some of our communities not so well situated.

Mr. CLARK. Now Mr. Craig, we shall be glad to have you go on.

STATEMENT OF MR. R. W. CRAIG

Mr. CRAIG. I have the honor to represent the Manitoba government in presenting to you very briefly, in response to your invitation, the views of the Manitoba government in connection with the main two questions that are before us now. One of them is the regulation of lake levels, and the other the provision of storage facilities. The Manitoba government in common with other governments has, of course, a duty to perform in this connection both to the business interests whose interests are involved in the consideration of these questions and to the general interests of the people of

the province, not only with regard to present power developments on the Winnipeg river which furnish light, heat and power to the citizens of Manitoba, but having regard to the future development of these enterprises. In addition to that, however, the Manitoba government is a large distributor of power—when I say large, I mean large having regard to the province as now constituted—with a capital investment of several million dollars and purchasing power for distribution throughout the province from the existing power sites on the Winnipeg river below Minaki. Further than that we have a potential interest which we have been pressing upon the Dominion government for a number of years, seeking to obtain for the province the ownership and control of its natural resources which would, of course, include the water powers on the Winnipeg river within the boundaries of the Province of Manitoba. Therefore, from all those points of view anything which would at all affect the power situation on the Winnipeg river would be of vital importance to the Province of Manitoba.

From all that has developed, at least all that I have heard since this inquiry commenced, it would not appear, at least from any evidence that has been submitted or statements that have been made that Manitoba is much more vitally affected than the old saying of the economist who claimed that an Indian could not beat his squaw on the shores of Hudson bay without affecting the price of beaver in London, England. It may be that we have no further interest in this proceeding than that. Yet, if the implications involved in these various four questions are to be considered seriously, and particularly the statements made by Mr. Backus and Mr. Thomas this morning, then it would appear that the Winnipeg power interests including the Province of Manitoba have a very vital interest in these proceedings, not only with regard to the regulation of the lake levels in question and the provision of storage facilities, but in regard to future developments as they may affect the citizens of Manitoba. It is from that angle that I wish to approach the question this afternoon. My remarks will be very brief and will be supplemented more specifically by statements to be made by Mr. Preudhomme representing the City of Winnipeg and Mr. Guy representing the Winnipeg Electric Company and Manitoba Power Company.

I wish, first of all, to state that we are not here to give evidence or to present arguments. I understood—in fact my understanding is borne out by a reference to the notice and invitation to be present—that we are invited only to attend and to present our views to the Commission. We assumed from that that this would be but a preliminary inquiry into the situation with a view to determine

what interests exactly will be affected, what their views are as to the possible effect of the proposals, and that a subsequent opportunity would be granted to us to furnish evidence and present argument on the various aspects of these questions. It may be that at the conclusion of this hearing sufficient information and evidence and opinion may be before the Commission which would possibly justify you in making a report which would render it unnecessary for us to do anything of that kind. But assuming for the moment that you will pursue this inquiry along the lines indicated in the notice, may I just refer to them briefly in order to indicate the position which we take at the moment. This submission in the form of a questionnaire naturally resolves itself into two divisions, one having to do with the future developments possible by reason of these proposals and the other having to do with the existing situation at Kettle falls and International falls.

The first three questions deal with the future development and the fourth question deals with the existing situation. What is involved in question No. 1? The question that is submitted to the Commission for investigation and report is as follows: Whether it is from an economic standpoint now practicable and desirable to regulate the levels and provide storage facilities or under what conditions it will become so. You will see first of all there is the consideration presented as to whether these proposals are practicable and desirable. There is a cumulative effect in that. It is not, are either practicable or desirable? It is, are they both practicable and desirable? It may be regarded that these proposals are entirely undesirable and we have heard a great deal of testimony urged very forcefully and eloquently upon the Commission to that effect. On the other hand they may be held to be desirable, but not practicable. What the Province of Manitoba is more interested in at the present time is in the two elements involved in the consideration as set out in the notice. These are the elements of time and expense.

The little word "now" precedes the words "practicable and desirable." Is it now practicable and desirable? There is the element of time. From an economic standpoint is it practicable and desirable? There is the element of expense, of expediency. From the consideration of the element of time our position is that these proposals would be of no immediate or direct benefit to the Province of Manitoba or the interests within its borders at the present time. We will be prepared at a later date to submit evidence to that effect. On the other point of view which follows subsequently, assuming for the moment that it is not now practicable and desirable, the further question goes on: Under what conditions will it become thus practicable and desirable? It may well be that certain conditions

will occur in the future which will make it both practicable and desirable that such developments should be recommended and these proposals should be carried into effect. That is where in our judgment at least the material presents itself for investigation by the Commission and that is, I may say, one of the things which the Manitoba government in association with the other interests of whom I spoke, are investigating at the present time. We are not in a position to give you the result of that investigation because it is not at all complete, but we are not overlooking the second feature of this inquiry which is covered by the words "under what conditions will it become thus practicable and desirable?"

With regard to the element of expense, there again we are at a loss to know exactly what expense will be involved in such an undertaking. The proposal that has been made by Mr. Backus is something new and would require very considerable investigation in order to determine its merits and its cost. But the question at once arises from the standpoint of Manitoba whether this proposed development can be carried into effect at a cost which would be proportionate as regards Manitoba's interests, to the benefits received. If our investigation shows that this cost or the probable assessed cost upon Manitoba of such development is out of proportion to the benefits which we might reasonably expect to receive, then of course we would have to answer that question in the negative.

We are not in a position to say more at the present time. As it appears to us now, we do not think this proposed development is desirable at the present time, that is "now" under the terms of this reference. Nor from our present knowledge do we think that if it is carried into effect it will be done at a cost which will be at all in proportion to the benefits which we might be held to have received. Doubtless, a very important element in regard to this will be presented by my learned friend Mr. Wilkie this afternoon when he comes to discuss one aspect of the cost of such a proceeding.

The next consideration is found in question 2, that is if it be found practicable and desirable. That is assuming that the conditions preceding have been established, which is very far from being the case; but assuming that important fact question No. 2 naturally follows: How is this to be done? How much is it going to cost? Who is going to pay that cost? We do not know. Certain suggestions were made in the lengthy memorandum of Mr. Backus yesterday which, I submit, will require very careful investigation. How much it will cost will of necessity—it always happens so—be a matter of opinion and one about which there may reasonably be expected a very considerable difference of opinion, and the total cost that will result

from such proceedings may upset all the calculations and estimates that might be presented.

The third feature of it, who will benefit, and how much will they benefit, is so essentially a matter of engineering opinion that a layman like myself would not even venture a suggestion by way of answer.

Question No. 3 is involved in the consideration of the other two questions. As regards question No. 3, just from the brief expressions of opinion which I have given as to our attitude to the two previous questions, our immediate feeling is that we do not need it. It is not desirable at the present time from our standpoint and any benefit that is obtainable cannot be obtained at a price at all proportionate to its cost. That is a matter which will require very serious investigation if the Commission wishes to pursue its investigation further, and in connection with it I respectfully ask that time be given to the Province of Manitoba and to other interests in Manitoba to complete the investigations they have under way at the moment and to be able to give the Commission the benefit and assistance of that investigation which we are making at the present time.

I wish to address myself very briefly to question No. 4. Mr. Backus made what seemed to me to be a very full and comprehensive statement of his position and the interests which he represents in regard to the first three questions. But I wish to say quite frankly that that statement, I will not say was unfair, but I will say was totally incomplete and inadequate so far as question No. 4 is concerned. There is plenty of room for differences of opinion in regard to the first three questions; but question No. 4 undertakes to deal with questions involving existing facts which should be easily capable of ascertainment and about which I submit this Commission should be put into immediate knowledge if the inquiry is to be pursued further. Question No. 4 contains three questions which require four answers. The first question has to do with the interests benefited by the existing storage on Rainy lake and the waters controlled by the dams at Kettle falls. The second question is: Who are the beneficiaries of that storage? The third question involves two answers; first, what is the cost of the storage; and second, how should that cost be apportioned among these beneficiaries? The bald statement was made that the power interests below Minaki on the Winnipeg river were benefited. That was made by Mr. Backus yesterday and repeated by Mr. Thomas this morning. There may be something to these considerations. It would seem to be a matter of evidence and of engineering opinion about which there might be very considerable difference of opinion and to which the Commission might devote itself before it accepts a mere memorandum in support of any such statement. That refers

also to the determination of who are the beneficiaries. But question No. 3 is something that, it seems to me, is very vital as regards the Winnipeg river power interests in the very first part of the question—what is the cost of such storage? You will remember that Mr. Backus was asked that question yesterday by Mr. Preudhomme in so far as the storage at Kettle falls was concerned, and my recollection is that he stated that he did not care to answer.

Mr. BACKUS. At this time.

Mr. CRAIG. I submit Mr. Backus not only could but should have answered that question, and that he not only could but should have answered a further question as to what was the cost of the existing storage at Rainy lake. No doubt, for reasons which appear to him as good and sufficient, he has not given us or the Commission the benefit of that information. I submit then that the position of Mr. Backus and the interests that he represents differs in regard to question No. 4 from the position which he might reasonably take in regard to questions 1 to 3.

Mr. BACKUS. The decision to withhold that answer now is not a question which is involved in this consideration at all. It is entirely an outside matter and our attorneys have asked me to withhold that answer at present. You and the Commission will be furnished with the information at the earliest date at which it can be done safely.

Mr. CRAIG. That answer is satisfactory only in so far as it goes, because we cannot deal with question No. 4 until we are put in possession of that information. That is quite obvious because we need to know the cost that will be apportioned among the beneficiaries of this storage of whom it will be claimed we are one. We will need to know the total cost before we can even estimate what our share or what may be claimed to be our share will be, so that we are completely in the dark in that respect. Mr. Backus repeats, as I anticipated, that he does not care to answer that question at the present time. Until that question is answered I submit first we are not in a position to give any answer whatever to question No. 4.

Mr. McCUMBER. Would you be satisfied with any answer until the government engineers had made their report?

Mr. CRAIG. No.

Mr. McCUMBER. Then no one could answer to the satisfaction of anyone, even this Commission. The Commission would want to have something definite from the engineers first, and it would be impossible to get that just at the present time.

Mr. CRAIG. So far we would have a right to assume that the answer made by Mr. Backus was not supported by satisfactory testimony. We could only take it when it is given by Mr. Backus

and supported by those who are in a position to give it on his behalf. Until that is done not only must Manitoba take the position that we cannot deal with question No. 4 but Mr. Backus must be asked to assume towards the answer to question No. 4 a different position entirely and a different attitude towards No. 4 from that which he has a perfect right to assume in answering questions Nos. 1 to 3. As regards No. 4 he comes in as a plaintiff in the case. I am given to understand that these storage works were built by him or his companies a number of years ago and, I am told, built with no idea of storage but rather with the idea of development of power for his private purposes. He will then have to establish his case, which will now be many years afterwards, that he has a right to some indemnities or contributions from some other persons or companies who take the benefit of what he has provided. He is in a different position, as I say, there. The onus is directly upon him to establish not only the cost, but his right to a contribution. There is where I say that the attitude of the Commission and of Mr. Backus with respect to the Commission towards question No. 4 must be quite different, I submit with all deference, from the approach to the answers to questions 1 to 3.

That is all I have to say except to renew the request which I made at the outset that, having regard to all these considerations, if the Commission desires to pursue the inquiry further, Manitoba be given an opportunity to present its evidence and its argument in regard to all of these matters. The four answers to this questionnaire will be presented by Mr. Preudhomme, City Solicitor of Winnipeg, and Mr. Guy representing the other power interests.

Mr. PREUDHOMME. Mr. Chairman and gentlemen of the Commission, may I have your indulgence to ask Mr. Backus another question?

Mr. CLARK. Do you appear in connection with the Province of Manitoba?

Mr. PREUDHOMME. Yes, sir, I represent the City of Winnipeg.

Mr. CLARK. How long do you expect to take?

Mr. PREUDHOMME. I shall not take nearly as long as Mr. Craig has. I shall finish in about ten minutes.

Mr. CLARK. All right; go ahead.

Mr. PREUDHOMME. Mr. Backus, can you tell me what the flowage is now at Rainy lake at Fort Frances?

Mr. BACKUS. What the level is?

Mr. PREUDHOMME. The flow.

Mr. BACKUS. Per second feet, you mean?

Mr. PREUDHOMME. Yes.

Mr. BACKUS. To-day?

Mr. PREUDHOMME. Yes; within this period of time, now.

Mr. BACKUS. I do not know.

Mr. PREUDHOMME. Can you tell us what it was last week?

Mr. BACKUS. If I was going to give it to you approximately I would say about 7,000 cubic feet per second.

Mr. PREUDHOMME. What would it be with your proposed scheme of development?

Mr. BACKUS. Between 8,000 and 9,000 second feet.

Mr. PREUDHOMME. What do you propose it shall be at the Lake of the Woods?

Mr. BACKUS. You mean the part of it that flows through here?

Mr. PREUDHOMME. You said 2,200 horsepower for the lower regions of the Winnipeg river. That is what we understood the interests down here would gain.

Mr. BACKUS. Constantly, yes.

Mr. PREUDHOMME. What flow do you estimate that would be?

Mr. BACKUS. Without looking up the figures, I should say that would be the division of sixty-one billion plus twenty-four billion into three hundred and ten days in the year.

Mr. PREUDHOMME. What flow would that give us at the outlet of the Lake of the Woods?

Mr. BACKUS. Outside of the precipitation it would be the same as here.

Mr. PREUDHOMME. From 8,000 to 9,000 second feet?

Mr. BACKUS. The total? We are only talking about the added flow.

Mr. PREUDHOMME. No; the total at the Lake of the Woods.

Mr. BACKUS. Yes; between 8,000 and 9,000 second feet.

Mr. PREUDHOMME. What range does that give you here?

Mr. BACKUS. I think that is based on a range of seven feet.

Mr. PREUDHOMME. What is the present range?

Mr. BACKUS. The present range would be anything you make it. It depends upon how low you draw your lake level and how high you raise it.

Mr. PREUDHOMME. What is that?

Mr. BACKUS. It is different in different years.

Mr. PREUDHOMME. Well, take last year.

Mr. BACKUS. Last year would not be a good criterion on account of the extreme low water. I think in 1924 we drew it below 490.

Mr. PREUDHOMME. And how high was it in 1924?

Mr. BACKUS. About 494.

Mr. PREUDHOMME. And this year how low has it been?

Mr. BACKUS. This year I do not believe it has been below 493 and up to 496.5.

Mr. PREUDHOMME. Thank you.

STATEMENT OF MR. J. PREUDHOMME

MR. PREUDHOMME. Now, Mr. Chairman, and gentlemen of the Commission, I represent the City of Winnipeg which owns a power site on the Winnipeg river that it was said was developed about fifteen years ago and just a little over half the power is now consumed. The City of Winnipeg is proud of its municipal development and the success which it has made of it financially. It wishes to continue to show that result. It can not, however, continue to show that result unless it counts the cost. It is in competition with the interests represented by Mr. Guy, and I think we both feel that we cannot undertake any new expenditures unless we can make a success commercially.

I have prepared a statement of what I regard as the pleadings which we are submitting in this matter. Like Mr. Craig, we are not advancing any argument because we hope to be able to support our pleadings by proper evidence at the appropriate time and an argument based upon the whole evidence. The statement that I have prepared is as follows:

RAINY LAKE REFERENCE

The City of Winnipeg submits:

1. That the existing works at Rainy and Namakan lakes were not constructed with a view to regulating the levels of the lakes or storing the waters thereof in the interests of the power sites on the Winnipeg river in Manitoba, but the existing elevation was fixed to provide suitable and adequate storage in the interest and for the special benefit of the owners of said works without giving the City of Winnipeg an opportunity of being heard in connection therewith.

2. That the City of Winnipeg has not in the past or does not at present need the benefit of existing storage on Rainy and Namakan lakes and therefore should not pay for any damages already accrued therefrom.

3. That if any attempt be made to consider the distribution of the costs of existing storage among the owners of sites on the Winnipeg river in Manitoba, the whole question of the proper elevation of the waters of Rainy and Namakan lakes must be considered *de novo*, as if the existing levels and storage had never existed.

4. If the questions of the benefits to the city to be derived from, and the assessment against the city of any of the costs of existing storage on Rainy and Namakan lakes are to be considered, the Commission must consider whether or not the existing elevation is unnecessarily high to provide the storage required by the city's plant at Pointe du Boise.

5. That it has not been shown and it is doubtful that if any of the damages or compensation payable in consequence of the existing storage on Rainy and Namakan lakes or either of them, or any of the damages which it is estimated would result from any increase of such storage, or from storage on the upper boundary lakes were to be assessed against the City of Winnipeg, the benefit it is estimated might be derived from such storage would be commensurate to, or justify the payment of the assessment.

6. That by regulating the waters of Rainy and Namakan lakes at ranges between elevations lower than the existing storage thereon, and by regulating the upper boundary waters at ranges between elevations lower than those proposed, the City of Winnipeg might obtain adequate storage thereof equally advantageous and more economical to the city than is possible under the existing or any increased elevation of the said lakes; and all parties, except the owners of the existing works, would thereby secure more advantageous use of the boundary waters flowing into and from Rainy lake than is possible with the existing storage.

7. In considering the question of the distribution of the cost of existing storage on Rainy and Namakan lakes, special regard must be had to the past regulation and use of the waters thereof and to the fact that the full benefit thereof has accrued solely to the owners of said works.

8. The City of Winnipeg is advised that it might be possible to obtain equally advantageous storage in other waters in the Province of Ontario in Canada, at less cost than the cost of existing storage or the estimated cost of increased storage on Rainy and Namakan lakes.

9. Owing to lack of adequate data it is impossible to deal definitely and effectively with the questions of—

(a) The benefit to be derived by the City of Winnipeg from additional storage on Rainy and Namakan lakes and on the upper boundary lakes, or

(b) The method or system of regulation possible and advisable for storage on these waters, or

(c) The method of administrative control for the operation of said storage reservoirs, or

(d) The attitude of the City of Winnipeg towards assuming a portion of the costs of additional storage on these waters.

10. The City of Winnipeg, however, takes the position and submits that no storage should be undertaken or provided which would result in imposing upon the city any burden in the form of payment of compensation or in any other form. If nevertheless such storage is undertaken and burden imposed the city should not be required to assume any portion of such burden out of proportion to the value to the city of any increase in the dependable flow of water in the Winnipeg river, having in mind the other sources from which it is possible for the city to obtain adequate storage and resulting flow.

STATEMENT OF MR. R. E. GUY

Mr. GUY. Mr. Chairman, and gentlemen of the Commission, I represent the Winnipeg Electric and the Manitoba Power Company Ltd., the owners, respectively, of two power sites and power plants on Pinnawa channel and the Winnipeg river, in which a good many millions of dollars are invested.

With regard to the questions submitted in the reference, I can only state, in order to save time, that the position which our companies take relative to those questions is the same as that given to you by the Honorable Mr. Craig, the Attorney General of the Province of Manitoba. But in addition to the questionnaire there were additional questions submitted to our companies.

The first question was:

In what way will your interests be affected by any of the proposals in the reference?

Our answer to that is that this question is too general in its terms and we do not feel that we are in a position at this stage of the investigation to say just in what way our interests may be affected.

At the present time we are familiar with the situation that Norman dam is now being connected to regulate the flow in the Winnipeg river. At Great Falls power plant, just recently constructed, only two units are in operation. We have capacity for four more units at that plant. Until such time as this capacity is utilized there is no necessity for us to obtain any additional storage, and any benefits that might accrue or any increased flowage in the Winnipeg river would simply be a matter of waste. We are not utilizing what we have there at the present time and just when we will be in a position to utilize that is a question which we can not answer now. It may be estimated anywhere from ten to fifteen to twenty-five years that we might require or desire additional flowage, and even if it came to that point and we desired the additional flowage, then the question would always have to be considered, where could we get the additional storage and where could we do it the cheapest?

The second question is:

(a) What benefits, if any, have you derived from the existing storage in Rainy and Namakan lakes, regulated as they have been in the past?

(b) The benefit you might expect to derive from existing storage on Rainy and Namakan lakes under some different system of regulation to that which has obtained in the past?

We are not suggesting at the moment that there should be any different system of regulation applied to the existing storage.

(c) To what extent or on what basis are you prepared to contribute to the cost of existing storage on Rainy and Namakan lakes?

We are not prepared to contribute to the cost of any existing storage, if any, on Rainy and Namakan lakes. We know of no works erected for the purpose of creating storage as storage. The dam built at International Falls was built by a private corporation for the purpose of water power development at that point, and as a private enterprise, and had not in view storage for any purpose other than to make provision to fulfill the private object and enterprise of the promoters thereof.

(d) The benefit you might expect to derive from additional storage on Rainy and Namakan lakes under some approved system of regulation.

We are not in a position to say what benefit we might expect to derive from additional storage on Rainy and Namakan lakes and on the upper boundary lakes under some approved system of regulation. We are doubtful if any benefit would accrue. We are not asking for and do not desire any additional storage, or suggesting that any should be provided on the waters in question.

With regard to questions (e) and (f) as to what method or system of regulation would you suggest and what method of administrative control do you suggest, we state that we have no suggestions to make.

(g) Providing it is shown that the total volume of storage which may be secured on these waters, under an approved method of control, would add to the dependable flow on the Winnipeg river, what would be your attitude towards assuming a portion of the storage costs, if dependable flow of river can be increased?

We are not in a position to answer this question at this stage of the proceedings. It involves a consideration of the factors which I have suggested before; that is, the time at which we might have a necessity for utilizing any additional flow, the cost of storage in other places, and the cost of that particular development. We would first have to get the total volume of storage that might be secured, the method of control and to what extent it might be expected to increase the dependable flow in the Winnipeg river and what the cost of same would be. In no event would we be prepared to contribute to the cost of the works primarily designed to benefit private enterprise by providing more head for power plants at or above International Falls.

With regard to question 4 in the original submission to the Commission, our companies feel that this question should not have been submitted to the Commission. The present storage on Rainy lake and on the waters controlled by the dams at Kettle falls was undertaken solely and entirely as a private undertaking and to provide for the utilization of power for commercial purposes, and was not in any respect intended as a storage basin to regulate the flow of water in the Winnipeg river, and if incidentally such storage for power purposes, (which is not admitted but denied) in any way contributed to the more uniform flow of the Winnipeg river, none of the power companies on the Winnipeg River should be asked or expected to contribute anything to such private enterprises. My companies take the very strongest grounds that under no circumstances at present known to them will they agree to contribute anything towards the cost of the works heretofore erected.

Mr. CRAIG. That is all the Winnipeg interests wish to present, Mr. Chairman.

Mr. BACKUS. Gentlemen, it becomes necessary at this juncture for me to remind the Winnipeg interests that this question they are bringing up today was supposed to have been threshed out and settled in November, 1922; and I am now about to submit to you, and for their information if they have forgotten about it, the arrangement which was made at that time. This original communi-

cation that I hold in my hand is from the State Department at Washington addressed to Mr. John Junell, Minneapolis, Minn., dated September 23, 1925, and reads as follows:

SIR: In compliance with the request contained in your telegram of September 21, 1925, addressed to Mr. Hackworth, the Department transmits herewith copies of the treaty and protocol concluded between the United States and Great Britain on February 23, 1925, to regulate the level of the Lake of the Woods; a notice of a public hearing to be held on September 28, 1925, at International Falls, Minn., by the International Joint Commission, to investigate certain questions relating to the use of the waters of Rainy lake and of the boundary waters flowing into and from Rainy lake; and a memorandum of tentative proposals for the settlement of questions involved in the regulation of the level of the Lake of the Woods made at a conference at Ottawa in November, 1922, between representatives of the United States, Canada, the State of Minnesota, and the American interests concerned.

I am, Sir,

Your obedient servant,

For the Secretary of State,

J. BUTLER WRIGHT,

Assistant Secretary.

Attached to this communication is the notice of the hearing. I will pass that as I understand that is the notice sent out by the secretaries of the International Joint Commission.

Attached also is a photostatic copy of the memorandum that was arrived at in a conference held at the request of Premier King, which memorandum was prepared by Mr. Challes, Mr. W. J. Stewart, Attorney General Hilton, Governor Preus, Mr. Junell and myself. There are some interlineations there and I have had copies made and am going to read from the copy so I can do so without hesitation. I will submit the original to the secretaries for comparison with the copy and then return the original to Mr. Junell.

The memorandum is as follows:

It is understood to be the contention of the United States that the principal benefit of the regulations of the Lake of the Woods would accrue to Canadian interests; and that American interests, in so far as power development is concerned, lie in the upper watershed. The Government of the United States has further contended that the control of Lake of the Woods and any control of the upper international waters should be considered as one general project in which both governments are interested. Owing to the fact that there is not available data sufficient to enable the two governments to determine to what extent said upper waters should be regulated, it is not practicable to reach a final agreement with respect to these waters at this time. However, in view of the immediate need for control of the waters of Lake of the Woods it has been thought proper and in the interests of both governments and their respective nationals, to conclude an agreement with respect to Lake of the Woods and to call upon the International Joint Commission for an investigation and report concerning the upper international waters.

It having contended by parties interested that the conclusion of an agreement regarding the Lake of the Woods would probably cover the main

concern of Canada in these waters, the Canadian Government as an indication of its good intention takes this occasion to inform the Government of the United States that it agrees with the view of the latter government that all these international waters should be considered as one general problem and treated as such.

To that end the Canadian Government agrees that should the International Joint Commission find that Canadian interests are or have been benefitted, or will enjoy a benefit from control exercised over the waters of Rainy and Namakan lakes, it will contribute towards the expense of such control, the fair share properly chargeable to Canadian interests; and that should the Commission find that further control of the upper international waters would be desirable, the Canadian Government will as expeditiously as possible enter into a further agreement, for this purpose, with the Government of the United States.

It is further understood, as a result of recent informal conferences held in Ottawa, that the State of Minnesota, desires that the International Joint Commission shall supervise the arbitration and appraisal of all claims for damages incident to past, present, and future storage on Rainy lake and international waters above. If this suggestion meets the approval of the United States the Canadian Government will be glad to consider it in connection with the drafting of the treaty to be entered into with respect to the upper international waters referred to above.

O. K. EWB

O. K. JAOP.

Mr. CLARK. Was the treaty subsequently entered into?

Mr. BACKUS. The treaty was subsequently entered into.

Mr. POWELL. Have you got the answer to that letter, Mr. Backus?

Mr. BACKUS. That was a joint letter prepared at the request of Premier King and the Cabinet at Ottawa at a meeting in November, 1922, and Governor Preus, Attorney General Hilton, Colonel Pratt, Mr. Junell, Mr. Challes, Mr. W. J. Stewart and myself all participated in the preparation of this document which was to be attached to the treaty. It was not thought proper to exchange letters between the two governments on account of some diplomatic forms they follow. The treaty is series No. 721 and was a result of that complete understanding.

As I say, I shall let the secretaries inspect the original and then file a copy with the Commission of these documents.

Just a word in addition as to the effects upon the Lake of the Woods matter. The recommendations of this Commission were filed in 1917. Following that the State of Minnesota felt that if that were disposed of without having an understanding as to these upper waters, there might be some questions arise, and Governor Preus and ourselves were interested in order that that would not be the result. Now the suggestion that is made by the representative of Manitoba simply demonstrates the fact that that precaution was well taken at that time.

Mr. PREUDHOMME. May I suggest that Mr. Backus is suggesting something which might be regarded as a reflection upon the attitude taken by the City of Winnipeg? I wish to point out to Mr. Backus that he in the ownership of the sites of these waters is filling the position of representing American as well as Canadian interests and he is as much responsible for the attitude of the Canadian Government as we are.

Mr. CLARK. I think, Mr. Wilkie, that you can safely go ahead with your part of the case unless Mr. Craig has something further to present.

Mr. CRAIG. I have nothing at all to add except to say that I do not think the last remark made by Mr. Backus calls for any reply. There is nothing inconsistent with the statement made by us in the statement he has just made.

CANADIAN NATIONAL RAILWAYS

Mr. WILKIE. Perhaps it will be pleasant news to you to know that I have at this time no argument to address to you. If the time comes for argument, that, I assume, will come after the evidence is put in in all these cases when, if necessary, we all will have an opportunity of summing up. Just one word before I commence the giving of evidence. We, the Canadian National Railway Company, all railway companies indeed, are not merely the machinery for earning revenues; we are quasi public corporations, earning if we can, but giving service to the people whom we serve whether we get revenue or not. I am pointing that out on account of the nature of certain evidence which I am going to adduce before you. Also, perhaps, I should have added that some regard must be paid in our case to the immensity of the interests involved, not merely the financial interest to those who own the road, but the economic interest of the country through which the road passes and which the road serves.

(W. Earl Watson was called as a witness and testified as follows:)

Mr. WILKIE. You are in the employ of the Canadian National Railways?

Mr. WATSON. Yes.

Mr. WILKIE. In what capacity?

Mr. WATSON. Agricultural agent.

Mr. WILKIE. How long have you been at work as an agricultural agent of our railways?

Mr. WATSON. Since the middle of February last year, I think, 1924.

Mr. WILKIE. How long have you been engaged in agricultural work of that character?

Mr. WATSON. Since January 1, 1919.

Mr. WILKIE. Will you tell me what the duties of your position are?

Mr. WATSON. Briefly, the duties of the agricultural department are the stimulating and fostering of the production of better livestock and the encouragement of better agricultural products among the people where we travel and particularly in the territory adjacent to our own lines.

Mr. WILKIE. Very briefly, because we will take it up further, what is your field of operations? What part of the country?

Mr. WATSON. From Port Arthur west to Victoria.

Mr. WILKIE. Along the Canadian National lines?

Mr. WATSON. Yes.

Mr. WILKIE. Can you tell me as to the development of settlement along those lines? Perhaps you can give it to us just in a general way, the growth and development of settlement as it has taken place and as it is now taking place.

Mr. WATSON. Unfortunately I cannot give you any definite figures regarding the development along our own road. I do not think any definite figures have ever been compiled and any statement I might make will refer to general conditions in western Canada.

Mr. WILKIE. Very well, then, let us have them. You have prepared a statement I think.

Mr. WATSON. Yes.

Mr. WILKIE. Does that show the rate at which the settlement has progressed?

Mr. WATSON. It shows the rate of increase of production rather than the increase of settlement.

Mr. WILKIE. We will get that later. Have you figures showing the total acreage now under cultivation in the different provinces?

Mr. WATSON. Yes.

Mr. WILKIE. Have you figures showing that acreage from year to year for the last ten or fifteen years?

Mr. WATSON. Yes.

Mr. WILKIE. Have you that statement with you?

Mr. WATSON. I have it right here.

Mr. WILKIE. Will you just give me some general information in regard to it and then we will put the statement in. What is the total of the occupied farm area say in 1921?

Mr. WATSON. There are roughly 87 million acres of occupied farms in the three provinces, that is Manitoba, Saskatchewan and Alberta.

Mr. WILKIE. I see for that purpose you have used the census of 1921. Why not the later one?

Mr. WATSON. Those are the latest reliable figures that are at hand in this connection.

Mr. WILKIE. Of this 87,916,000 acres, how much is improved?

Mr. WATSON. Roughly 44 million acres.

Mr. WILKIE. How much of the improved was actually under crop in the year 1921?

Mr. WATSON. In the year 1921 there were roughly 32 million acres in crop.

Mr. WILKIE. The result would show that of the occupied farms only about fifty per cent are improved.

Mr. WATSON. Yes.

Mr. WILKIE. And of the improved farms, a considerable proportion is not under crop?

Mr. WATSON. Roughly about one-third of the total occupied area was under crop in 1921.

Mr. WILKIE. Can you tell me how that condition is now?

Mr. WATSON. For 1925, in round figures there are 35 million acres in crop.

Mr. WILKIE. Have you any figures as to the amount occupied?

Mr. WATSON. No, I have not definite figures. As I say, the figures I have given you are the latest tabulations we have on the occupied lands.

Mr. WILKIE. What do you say as to the amount of available grain land not yet under crop in the territory which the Canadian National road serves?

Mr. WATSON. Well, of course, this figure is only an estimate. It is as reliable a figure as we can get. It is an estimate made by the Dominion which states that there are in the neighborhood of 167 million acres of arable land in the three prairie provinces.

Mr. WILKIE. Of which you tell us some 32 million acres are actually under crop.

Mr. WATSON. Thirty-five million acres are actually under crop this year.

Mr. WILKIE. I understand that, generally speaking, the Canadian National Railway runs through the northern portions of the provinces; is that correct?

Mr. WATSON. Yes, that is absolutely correct. The early settlement in western Canada, as we all know, followed the southern sections of the provinces and the later development has taken place in the northern areas which are less prairie-like in extent, the general nature of the country is more wooded. It has not been brought

under cultivation so rapidly, but the productiveness of that area is very much superior to the open sections.

Mr. WILKIE. That is, the northern lands are more productive than the southern?

Mr. WATSON. Yes.

Mr. CLARK. How are the climatic conditions as between the two? Are there any differences?

Mr. WATSON. There is no difference worth mentioning.

Mr. WILKIE. You have made some computations as to the acreage under crop in the three provinces as it has grown from year to year, have you those tabulated?

Mr. WATSON. In 1914 the total acreage in crop was 16 million acres. I am giving these in round figures. In 1919 it was 30 million acres; in 1924, 34 million acres; and in 1925, 35 million acres.

Mr. WILKIE. So that in the ten years from 1914 to 1924, the increase in crop acreage was how much per cent? Have you computed that?

Mr. WATSON. The acreage has practically doubled in that time.

Mr. WILKIE. As to the growth in total yield, have you made computations?

Mr. WATSON. I have worked that out not on a basis of individual years but rather on the basis of averages over a period. If I were to give you figures for any individual year, you would find them very misleading and they would not demonstrate any actual development.

Mr. WILKIE. That is because of the crop in one year being a very large one and the crop, perhaps, of the succeeding year being smaller?

Mr. WATSON. Due to excessive drought in summer or hail damage or other factors which may have influenced the gross amount of the crop for that particular season.

Mr. WILKIE. What does your computation in groups of five years show?

Mr. WATSON. I have singled these out in provinces for the purpose of illustrating the areas which are likely to expand more rapidly in grain production. They are for the five year period commencing 1910, ending 1914, the average annual production of all grains. In Manitoba, the amount was 110 million bushels. From 1915 to 1919, the average annual production was 117 million bushels and from 1920 to 1924 it was 137 million bushels.

Mr. WILKIE. Did you work the percentages out there?

Mr. WATSON. That amounts to an increase in a ten-year period of about 17 per cent.

Mr. WILKIE. The next province.

Mr. WATSON. In Saskatchewan from 1910 to 1914 the average annual production was 205 million bushels; from 1915 to 1919 it was 281 million bushels, and from 1920 to 1924 it was 381 million bushels.

Mr. WILKIE. So that in the fifteen years from 1910 to 1924 the Saskatchewan crop very nearly doubled?

Mr. WATSON. Very nearly doubled, yes.

Mr. WILKIE. Take Alberta.

Mr. WATSON. In Alberta for the same period, 1910 to 1914, the average annual production was 89 million bushels; from 1915 to 1919 it was 139 million bushels, and from 1920 to 1924 it was 175 million bushels.

Mr. WILKIE. So that in the fifteen years from 1910 to 1924 the crop of Alberta also very nearly doubled?

Mr. WATSON. Very nearly doubled, yes.

Mr. WILKIE. Can you give me the percentage of increase in the last ten years for Saskatchewan and Alberta? You gave it for Manitoba.

Mr. WATSON. Saskatchewan, roughly 35 per cent; Alberta, 25 per cent.

Mr. WILKIE. Those are the figures as to the increase in crop up to date. What do you say are the prospects for future increases?

Mr. WATSON. I intimated in my answer to your previous question, we had roughly 87 million acres occupied, of which 44 million were classified as improved farms. Assuming that we should bring into crop another 10 million acres within the next five years, and assuming that we would have the same average yield for all grains during the next five-year period as we have had during the past five, it will increase the gross yield by 220 million bushels.

Mr. WILKIE. That is the annual yield?

Mr. WATSON. Yes. That will bring the gross annual yield up to over 900 million bushels.

Mr. WILKIE. What about the other agricultural products in the same region, live stock for example? What has taken place with regard to the production of live stock?

Mr. WATSON. Live stock marketings during the last five years have increased by over fifty per cent. That is the marketings at all the public stock yards in the three provinces.

Mr. WILKIE. That includes?

Mr. WATSON. Cattle, sheep, swine, calves.

Mr. WILKIE. Do you know what number of cattle have been marketed and passed out through this road in the last five years—I mean this southern road?

Mr. WATSON. I cannot give you that by carload. I can give you that by head.

Mr. WILKIE. Can you tell me that by head?

Mr. WATSON. I presume you mean stock movements to eastern markets. Live stock on through billings to other stock yards: 1920, 126,000 head; 1924, 316,000 head.

Mr. CLARK. Does that cover all classes of live stock?

Mr. WATSON. Yes, cattle, calves, sheep and swine. It does not include the movement of horses.

Mr. WILKIE. Those would go out partly over the Canadian National and partly over the Canadian Pacific?

Mr. WATSON. I would not tell you at the moment just what proportion has been moved east by the Canadian National excepting to say that a very large proportion of eastern-bound stock which is being routed to competitive points is being moved by the Canadian National.

Mr. WILKIE. In dairying, what has been the growth of the three provinces?

Mr. WATSON. I think I should give you the comparison by provinces. The Province of Manitoba in 1914 imported butter for domestic requirements. In 1923, 180 carloads of butter were exported from that province to eastern markets, Great Britain and the United States. In 1924, 198 carloads were exported. The Province of Saskatchewan in 1906 produced 133,000 pounds of butter; in 1924, 13,000,000 pounds.

Mr. WILKIE. About one hundred times as much?

Mr. WATSON. Yes. The production to the first of this month for this year in Saskatchewan amounts to over 11,000,000 pounds. Alberta, in 1905, had a butter production of 813,000 pounds; in 1923, over 17,000,000 pounds.

Mr. WILKIE. That is an increase of over twenty times in that period?

Mr. WATSON. Yes. Cheese production in Alberta was 100,000 pounds in 1911 and 1,850,000 pounds in 1923. Those figures have been obtained from the dairy branches of the respective provincial governments.

Mr. WILKIE. What about poultry and eggs in these provinces.

Mr. WATSON. The production of poultry has kept pace with the production of other agricultural products. For example the Province of Alberta in 1920 imported poultry and poultry products for domestic consumption. Last year they exported to eastern and

southern markets something over 260 carloads of live and dressed poultry and eggs. The exports from Saskatchewan last year amounted to approximately the same figures, 260 carloads. The Province of Manitoba commenced exporting about five years ago. I have not a record of the definite figures for export for last year.

Mr. WILKIE. Have you put these figures that you have given me in the form of tables showing the areas under crop and the crops for each of the years 1908 down to 1924?

Mr. WATSON. Yes, I have compiled those figures for you.

Mr. WILKIE. Can you give me two copies for the secretaries and I will put that in and close it up.

Mr. WATSON. Yes.

Mr. WILKIE. I suppose you do not keep track of just what portion of these different products pass out on the lines of the Canadian National Railways?

Mr. WATSON. I am not in a position to do that, not being connected with either the traffic or operating departments. I presume they have those figures ready and available for you.

Mr. WILKIE. Does that cover everything of interest you will be able to tell us?

Mr. WATSON. That covers the question of production.

(The following is the statement handed in by Mr. Watson:)

Areas

ALBERTA

Year	Wheat	Oats	Barley	Rye	Flaxseed	Total
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
1908.....	271,000	519,400	129,800	6,500	5,900	932,600
1909.....	385,000	820,000	186,000	6,800	5,800	1,403,600
1910.....	879,756	783,074	121,435	6,672	30,885	1,821,822
1911.....	1,639,974	1,221,217	164,132	14,443	107,171	3,146,937
1912.....	1,590,000	1,461,000	187,000	15,000	132,000	3,285,000
1913.....	1,512,000	1,639,000	197,000	16,000	105,000	3,469,000
1914.....	1,371,100	1,502,000	178,000	16,400	80,000	3,147,500
1915.....	2,138,031	1,827,071	304,009	15,963	48,000	4,333,074
1916.....	2,604,975	2,124,081	336,586	17,975	96,063	5,178,680
1917.....	2,897,300	2,537,900	472,100	30,880	139,800	6,077,980
1918.....	3,892,489	2,651,542	470,073	47,877	95,920	7,157,907
1919.....	4,282,503	2,767,372	414,212	83,804	80,690	7,628,582
1920.....	4,074,483	3,089,700	480,699	160,960	103,700	7,909,542
1921.....	5,123,404	2,911,743	568,191	222,136	28,434	8,853,908
1922.....	5,765,595	1,614,500	378,053	603,583	22,186	8,383,917
1923.....	5,172,643	2,299,546	383,858	396,758	15,000	8,267,805
1924.....	5,573,813	2,303,624	493,891	274,372	15,000	8,660,700

NOTE.—Total acreage in crop, Manitoba, Saskatchewan, Alberta:

1914.....	16,726,400
1919.....	30,380,116
1924.....	34,096,126
1925.....	35,672,336

Yield

MANITOBA

Year	Wheat	Oats	Barley	Rye	Flaxseed	Total
	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>
1908.....	50,269,000	44,711,000	17,093,000	101,000	281,000	112,455,000
1909.....	52,706,000	55,267,000	20,866,000	75,000	317,000	129,231,000
1910.....	34,127,000	30,346,879	6,516,634	29,045	176,675	71,192,733
1911.....	62,689,000	60,037,000	14,949,000	104,000	1,152,000	138,931,000
1912.....	63,017,000	57,154,000	15,826,000	105,000	1,252,000	137,354,000
1913.....	53,331,000	56,759,000	14,305,000	103,000	632,000	125,130,000
1914.....	38,605,000	31,951,000	9,828,000	100,000	338,000	80,822,000
1915.....	69,337,000	50,750,000	16,658,000	208,000	120,000	137,073,000
1916.....	29,667,000	48,439,000	13,729,000	557,000	21,000	92,413,000
1917.....	41,039,700	45,375,000	15,930,000	638,300	146,700	103,129,700
1918.....	48,191,100	54,473,500	27,963,400	3,935,700	1,091,000	135,654,700
1919.....	40,975,300	57,698,000	17,149,400	4,089,400	520,300	120,432,400
1920.....	37,542,000	57,657,000	17,520,000	2,318,600	1,157,800	116,195,400
1921.....	39,065,000	49,442,500	19,681,600	3,564,700	544,700	112,297,500
1922.....	60,051,000	74,433,000	28,863,000	7,078,000	734,000	171,159,000
1923.....	35,804,000	58,704,000	25,726,000	4,620,000	1,395,000	124,249,000
1924.....	41,464,000	70,729,000	40,923,000	5,875,000	3,403,000	162,394,000

Average annual yield five year period:

1914.....	110,685,946
1919.....	117,740,500
1924.....	137,256,980

SASKATCHEWAN

Year	Wheat	Oats	Barley	Rye	Flaxseed	Total
	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>
1908.....	34,742,000	29,205,000	1,952,000	41,000	1,144,000	67,084,000
1909.....	85,197,000	91,976,000	4,493,000	38,000	1,787,000	182,311,000
1910.....	66,978,996	58,922,791	3,061,007	11,639	3,893,160	132,867,593
1911.....	109,075,000	107,594,000	8,661,000	61,000	7,672,500	233,063,500
1912.....	106,965,000	117,537,000	9,595,000	57,000	23,033,000	257,187,000
1913.....	121,559,000	114,112,000	10,421,000	68,000	15,579,000	261,739,000
1914.....	73,494,000	61,816,000	4,901,000	54,000	6,131,000	144,396,000
1915.....	224,312,000	145,066,000	9,523,000	203,000	5,255,000	384,359,000
1916.....	147,559,000	163,278,000	9,916,000	548,000	6,692,000	327,993,000
1917.....	117,921,300	123,213,000	14,067,900	998,400	4,710,600	260,910,200
1918.....	92,493,000	107,253,000	11,888,000	1,420,000	4,205,000	217,259,000
1919.....	89,994,000	112,157,000	8,971,000	2,000,000	2,490,000	215,612,000
1920.....	113,135,300	141,549,000	10,501,500	2,535,000	5,705,000	273,425,800
1921.....	188,000,000	170,513,000	13,343,000	13,546,000	3,230,000	388,630,000
1922.....	250,167,000	179,708,000	18,511,000	16,164,000	4,079,000	468,629,000
1923.....	271,622,000	218,075,000	19,278,000	8,582,000	5,493,800	523,051,000
1924.....	132,918,000	97,345,000	17,360,000	2,507,000	6,119,000	256,249,000
1925.....						

Average annual yield five year period:

1914.....	205,850,618
1919.....	281,226,640
1924.....	381,996,960

ALBERTA
Yield—Continued

Year	Wheat	Oats	Barley	Rye	Flaxseed	Total
	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>	<i>Bush.</i>
1908.....	6,842,000	22,802,000	3,881,000	200,000	74,000	33,799,000
1909.....	9,579,000	38,376,000	5,999,000	152,000	109,000	54,215,000
1910.....	9,060,210	16,893,840	2,480,165	109,006	78,480	28,621,701
1911.....	30,602,000	59,034,000	4,356,000	394,000	1,114,000	101,500,000
1912.....	34,303,000	67,630,000	6,179,000	377,000	1,693,000	110,182,000
1913.....	34,372,000	71,542,000	6,334,000	398,000	1,155,000	113,801,000
1914.....	28,859,000	57,076,000	4,806,000	360,800	614,000	91,715,800
1915.....	66,538,000	83,876,000	9,822,000	374,726	670,000	161,290,726
1916.....	65,088,000	102,199,000	9,774,000	440,000	1,310,500	178,811,500
1917.....	52,992,100	86,288,600	10,386,200	633,000	978,600	151,278,500
1918.....	23,752,000	60,323,000	7,756,000	826,000	480,000	93,137,000
1919.....	34,575,000	65,725,000	10,562,000	1,173,000	222,000	112,257,000
1920.....	83,461,000	115,091,000	12,739,000	3,420,000	726,000	215,437,000
1921.....	53,044,000	64,192,000	11,657,000	1,999,000	171,000	130,963,000
1922.....	64,976,000	35,519,000	6,238,000	6,187,000	88,700	113,008,700
1923.....	144,834,000	114,977,000	14,774,000	7,640,000	156,000	282,381,000
1924.....	61,312,000	60,972,000	10,293,000	3,206,000	55,900	135,838,900
1925.....						

Average annual yield five year period:

1914.....	89,164,100
1919.....	139,352,945
1924.....	175,485,720

Yearly summary—Live stock marketings

WINNIPEG

	Cattle	Calves	Hogs	Sheep
1920.....	291,634	24,799	145,460	62,864
1921.....	158,613	21,490	120,957	49,210
1922.....	294,098	34,158	176,777	52,461
1923.....	282,218	34,380	243,792	36,020
1924.....	296,205	37,177	372,053	32,022

. CALGARY

1920.....	92,777	14,218	29,426	53,609
1921.....	80,027	13,215	48,535	68,801
1922.....	89,610	16,313	82,853	61,141
1923.....	77,360	11,338	88,658	56,964
1924.....	94,075	14,757	119,658	42,003

EDMONTON

1920.....	43,396	6,234	25,910	9,977
1921.....	39,742	5,289	35,341	10,399
1922.....	88,450	12,827	71,047	15,206
1923.....	64,941	10,294	73,501	8,747
1924.....	77,599	10,617	74,855	7,525

Yearly summary—Live stock marketings—Continued

PRINCE ALBERT

	Cattle	Calves	Hogs	Sheep
1920.....	8,309	600	2,756	2,270
1921.....	3,006	382	7,317	459
1922.....	4,856	490	7,562	750
1923.....	3,955	425	12,794	199
1924.....	3,738	571	20,807	224

MOOSE JAW

	Cattle	Calves	Hogs	Sheep
1920.....	18,147	1,477	17,134	7,695
1921.....	7,434	533	5,822	5,876
1922.....	10,308	714	14,399	7,550
1923.....	8,861	867	33,717	5,575
1924.....	11,665	950	60,462	6,844

Live stock on "Through billing"

ALL STOCK YARDS IN WESTERN CANADA

	Cattle	Calves	Hogs	Sheep
1920.....	98,019	454	7,814	20,704
1921.....	72,729	852	13,167	40,462
1922.....	193,648	6,704	68,966	52,637
1923.....	116,571	1,193	88,284	26,643
1924.....	163,327	3,165	113,665	36,430

Total live stock marketings—Western Canada

Year	Cattle	Calves	Hogs	Sheep	Total
1920.....	454,253	47,328	220,686	135,835	858,102
1921.....	287,822	40,918	217,972	134,745	681,457
1922.....	487,322	64,502	352,268	137,108	1,041,200
1923.....	437,434	57,304	451,462	107,505	1,053,705
1924.....	483,282	64,072	647,864	88,618	1,283,836

Total marketings increased by 425,734 head 1920-1924.

(Albert Wilcox was called as a witness and testified as follows:)

Mr. WILKIE. You are in the employ of the Canadian National Railways?

Mr. WILCOX. Yes, sir. I entered the employ of the Canadian Northern Railway which is now part of the Canadian National system, in the spring of 1903.

Mr. WILKIE. How long were you with the Canadian Northern Railway?

Mr. WILCOX. I was with them from 1903 until the Canadian Northern Railway became part of the Canadian National system. I am still with them.

Mr. WILKIE. While it was the Canadian Northern Railway, in what capacity were you employed with them?

Mr. WILCOX. I joined the Canadian Northern Railway first at Port Arthur as chief train despatcher, subsequently being promoted to superintendent, to general superintendent, and general superintendent of transportation.

Mr. WILKIE. What is your present position?

Mr. WILCOX. General Superintendent of Transportation.

Mr. WILKIE. You reside at Winnipeg?

Mr. WILCOX. Yes, sir, that is my headquarters.

Mr. WILKIE. From Winnipeg to Port Arthur you have how many lines?

Mr. WILCOX. Two lines.

Mr. WILKIE. One running north of this and the other is the one on which Fort Frances is situated.

Mr. WILCOX. Yes.

Mr. WILKIE. The southern one that runs through Fort Frances is the old Canadian Northern?

Mr. WILCOX. Yes.

Mr. WILKIE. And that is the road on which you were originally engaged?

Mr. WILCOX. Yes.

Mr. WILKIE. Did you tell us what your position was in regard to that piece of road?

Mr. WILCOX. Well, as General Superintendent of Transportation, I am expected to have general supervision of all traffic.

Mr. WILKIE. No, but I understand at one time you were local superintendent.

Mr. WILCOX. I was superintendent at Port Arthur for a number of years, that is, having charge of the lines between Port Arthur and Winnipeg, and I have been superintendent at other portions of the line, and as general superintendent I was located at Edmonton first, and subsequently at Winnipeg.

Mr. WILKIE. But you were Superintendent of Transportation on the road from Winnipeg to Port Arthur?

Mr. WILCOX. Local superintendent first.

Mr. WILKIE. Then as local superintendent, did you have some knowledge of what was going on on this road and of the road itself?

Mr. WILCOX. I think I can say I had.

Mr. WILKIE. As general superintendent can you tell us to what extent these two lines of road are now occupied at the present instant?

Mr. WILCOX. I could by reading a telegram I received this morning, and I receive such a report every day. This report is not obtained specially for this meeting. I think this will give a good

example of what we are doing on these two lines. If it is in order to read it, I will do so.

Mr. WILKIE. Read it.

Mr. WILCOX. We delivered yesterday at the head of the lakes 1,108 cars of grain. We unloaded 1,160. We have on the north line moving at the present moment 1,561 cars of grain and 826 empties. On the south line, which is the line running through Fort Frances, we have 1,821 cars of grain and 1,048 empties in transit.

Mr. WILKIE. What is the capacity of a single line of road in single cars per day?

Mr. WILCOX. I would say that the maximum capacity on a single track would be about 600 cars each way. That would be the absolute maximum capacity in good condition over this line.

Mr. POWELL. What do you mean by this line?

Mr. WILCOX. The line between Winnipeg and Port Arthur.

Mr. CLARK. I do not just get the significance. You say you have 1,800 loaded cars on the track now?

Mr. WILCOX. But that covers a number of subdivisions between Winnipeg—there are three different subdivisions.

Mr. CLARK. Your last question was what?

Mr. WILKIE. I thought his statement would be quite clear to a railroad man, but I thought it would not be clear to the Commission, so I put it the other way—how many cars?

Mr. CLARK. He says 600. I do not just reconcile in my mind the two statements.

Mr. WILCOX. The line between Winnipeg and Port Arthur is divided into three sections, so that the 1,800 would be over all those and the 600 over any one portion.

Mr. CLARK. You are running substantially to capacity now?

Mr. WILCOX. We are at the peak now.

Mr. WILKIE. The peak might be one thing. The chairman asked you if you were running practically to capacity.

Mr. WILCOX. We are.

Mr. WILKIE. On both lines?

Mr. WILCOX. Yes.

Mr. WILKIE. These figures that you have just given us as to the cars on the line are for grain cars?

Mr. WILCOX. Grain cars.

Mr. WILKIE. In addition to the grain cars you have passenger trains?

Mr. WILCOX. Yes. On the north line we have two passenger trains each way a day.

Mr. WILKIE. On the south line?

Mr. WILCOX. We have two passenger trains each way west from Fort Frances and a tri-weekly passenger train between Fort Frances and Port Arthur.

Mr. WILKIE. On this south line you have other freight traffic as well as your grain traffic?

Mr. WILCOX. Yes.

Mr. WILKIE. I will not bother you with the details of it because you tell me your line is practically filled. Then in effect, both of your lines running from Winnipeg to Port Arthur are at the present time operating practically to capacity?

Mr. WILCOX. Yes.

Mr. WILKIE. You are familiar I understand with crop conditions in the west?

Mr. WILCOX. Fairly familiar.

Mr. WILKIE. How long do you anticipate that that condition will continue of your road being operated to capacity?

Mr. WILCOX. Well, I believe it will continue to increase—the crop production in the west—

Mr. WILKIE. I mean for the present year—how late into the fall?

Mr. WILCOX. We expect to keep it up until the close of navigation which will be between the 5th and 10th December. As a rule, October is probably the heaviest month that we have. However, it sometimes changes and it may be we will be running to our fullest capacity right up until the close of navigation providing the boats at the head of the lakes take it out of the elevators.

Mr. WILKIE. Supposing that you do operate to the close of navigation to the full capacity of your two roads, will that move the entire crop of the west?

Mr. WILCOX. No, I do not think it will. There will be considerable left over.

Mr. WILKIE. There will still be grain unmoved in the western provinces?

Mr. WILCOX. Yes.

Mr. WILKIE. How does that get out ultimately?

Mr. WILCOX. Well, sometimes a certain amount of it is moved all-rail from the head of the lakes. If there is a demand for export and sufficient inducement to ship it all-rail, they would move a certain amount of it out of the head of the lakes and then move other grain down and a certain amount would go west to Vancouver.

Mr. WILKIE. You mean if sufficiently high prices were obtained, you might ship some of the stuff out of the elevators in Port Arthur down east and then that would open accommodation and you would get more wheat from Winnipeg to fill the vacant space in the elevators?

Mr. WILCOX. That has been our experience in past years.

Mr. WILKIE. That brings you along to the spring. What have you then in the way of residuum of crop?

Mr. WILCOX. As a rule we have considerable held over. There may be reasons why the people who own the grain hold it over. They have quite large storage elevators in the interior which they may use for storing their grain, and there are many other conditions as to why they should hold it. In any event we are sometimes hauling grain right through the whole year.

Mr. WILKIE. What about the spring months as to their being busy?

Mr. WILCOX. As a rule we are quite busy during the spring.

Mr. WILKIE. Which months?

Mr. WILCOX. The latter part of April and May and June. In fact it has gone right up until the new crop comes in, but not running at the highest peak movement, of course.

Mr. WILKIE. You were speaking a moment ago about the prospects of future crops. What do you say as to those?

Mr. WILCOX. Well, we expect that the production is going to increase and we have every reason to expect that in time the present output will be doubled.

Mr. WILKIE. If it should substantially increase, would it be possible for the existing roads to take it out?

Mr. WILCOX. I do not think so—not with the present facilities.

Mr. WILKIE. What would be necessary for your road to do in the way of track laying?

Mr. WILCOX. Well, I would suggest that we could double track the line and perhaps handle nearly four times as much as we do on a single track.

Mr. WILKIE. That is, double track——

Mr. WILCOX. Yes, double track one of our lines.

Mr. WILKIE. If you would do that, which line would it be?

Mr. WILCOX. The southern line.

Mr. WILKIE. Why?

Mr. WILCOX. Because on the other line the expense would be practically prohibitory. That is, there is so much rock work and tunnels, I do not believe the Dominion government have money to spare to undertake it.

Mr. POWELL. That is a general truth with respect to railways that if you had two lines you could route with a capacity carriage?

Mr. WILCOX. Yes.

Mr. WILKIE. Your rival, the Canadian Pacific has a double track from Fort William to Winnipeg, has it not?

Mr. WILCOX. Yes, quite a large amount of their system is double tracked west of the head of the lakes.

Mr. WILKIE. Parts of this road that we are immediately interested in, are double tracked, are they not, of your own Canadian National southern line?

Mr. WILCOX. Well, there is a very little portion of it. Do you mean from Winnipeg east?

Mr. WILKIE. From Winnipeg to Port Arthur.

Mr. WILCOX. There is some double tracking from Conmee Junction east and there is a small piece of double track between Rainy River and Winnipeg.

Mr. WILKIE. You have the two lines, one to the south and the other to the north. How do you route your cars loaded with grain?

Mr. WILCOX. Well, we give the south line a little more grain to carry than the north line.

Mr. WILKIE. Why?

Mr. WILCOX. Because there are not so many passenger trains and not so much time freight to contend with.

Mr. WILKIE. On the north line you have passenger and time freight?

Mr. WILCOX. Yes.

Mr. WILKIE. That is the more direct line to the east?

Mr. WILCOX. The cut-off has been built between Nakina and Long Lac.

Mr. WILKIE. What about the empties?

Mr. WILCOX. The empties come back the same way the others come down.

Mr. WILKIE. Some of us had the idea you could bring the loaded cars on one line and send the empties out on the other.

Mr. WILCOX. We would like to be able to do it but the organization we have an agreement with, I do not know whether they are afraid we will handle it too quickly or not, but they do not agree with the proposition, they say they would be away from home, they would have to go right around in a circle. While it would be a nice proposition all right, they will not stand for it.

(Francis Edward Collinson was called as a witness and testified as follows:)

Mr. WILKIE. Mr. Collinson, please state your full name.

Mr. COLLINSON. Francis Edward Collinson.

Mr. WILKIE. You are in the employ of the Canadian National Railways?

Mr. COLLINSON. Yes, sir.

Mr. WILKIE. In what capacity?

Mr. COLLINSON. Mechanical engineer.

Mr. WILKIE. As mechanical engineer do you know the power and rolling stock in operation on this southern line of the Canadian National Railways?

Mr. COLLINSON. Yes, sir.

Mr. WILKIE. Will you tell the Commission just the character of the rolling stock, whether it is up to date or whether it is not?

Mr. COLLINSON. In regard to locomotives on the south line we have the three latest classes of engines working on the western region. These are distributed according to the nature of the subdivisions. The east end from the head of the lakes has the heaviest grade and the heaviest engines. On this middle subdivision is the next class assigned and the lightest of the three is on the west end. On the Canadian National the locomotives are rated for their haulage power on the rate in tractive effort that they are intended to draw. A thousand pounds from the tender end is called one per cent. Of these three classes 53 per cent are on the west end. There are 55,000 pound engines on the center and 65,000 pound engines on the east end. The engines on the middle subdivision are the latest built for the western region. These engines in addition to the tractive effort they develop from their main driving wheels are equipped with a booster engine which turns the trailing wheels, the small wheels under the cab, into drivers for the purpose of starting a train or taking it over a heavy pull. So that these engines besides developing 55,000 straight through run on a start will develop up to 65,000 pounds.

Mr. WILKIE. And you say they are recent?

Mr. COLLINSON. That class of engine was built in 1923 and 1924, and this year there were not many engines built for the western region.

Mr. WILKIE. To sum it up briefly, this southern line is equipped with up to date trackage and rolling stock?

Mr. COLLINSON. Yes; we have the latest power on them.

(J. L. Pickles was produced as a witness, and testified as follows:)

Mr. WILKIE. Your full name, Mr. Pickles?

Mr. PICKLES. J. L. Pickles.

Mr. WILKIE. You are in the employ of the Canadian National Railways?

Mr. PICKLES. I am.

Mr. WILKIE. Where are you located?

Mr. PICKLES. At Duluth.

Mr. WILKIE. In what capacity?

Mr. PICKLES. District Engineer.

Mr. WILKIE. Over what portion of the road do you exercise jurisdiction?

Mr. PICKLES. Over the Duluth, Winnipeg & Pacific Railway extending from Duluth to Fort Frances.

Mr. WILKIE. Can you tell us what if any effect the raising of the level of Rainy lake up to 500 public works datum would have upon your portion of the Canadian National Railways?

Mr. PICKLES. To begin with it would flood our tracks out or come up so near the tracks that at the northerly end we would have to raise the tracks and it would be necessary to raise the Rainy River or Pithers Point bridge and grade the track up to the next suitable approach for this rail. The figures for this have been taken care of by the other engineering department.

Mr. WILKIE. We will take up the Pithers Point bridge with some one else, but I will ask you to take up the rest of the line from Pithers Point on and state what effect the raising of the water would have upon the railway.

Mr. PICKLES. Next after the bridge would come our water dam or pump house at Ranier which would have to be raised to take care of the track. The pump house would be flooded out by the raise and would necessarily have to be raised. After that would come the depot at Ranier. The basement would be flooded and it would be necessary to raise the depot and rearrange the sewerage system.

Mr. CLARK. How much above the present mark are your buildings there?

Mr. PICKLES. The station at Ranier would be about four or six inches at the bottom of the basement. The depot would have to be extended to take care of the raise.

Mr. McCUMBER. Your basement is about six inches above the water level?

Mr. PICKLES. No; there would be about four to six inches of water in the basement when the water is raised.

Mr. McCUMBER. If the water is raised how many feet?

Mr. PICKLES. On the 500 foot level.

Mr. McCUMBER. That would be how much above the present level?

Mr. PICKLES. Today's level?

Mr. McCUMBER. Yes.

Mr. PICKLES. I do not know what today's level is.

Mr. McCUMBER. I will not say today's level but the normal level since the dam has been put in.

Mr. PICKLES. With the normal level it is something like 10.5 feet below at the present time. I have not taken any levels on this lake.

Mr. WILKIE. I think the Senator was asking you in effect what the raise would be above the present high water mark. Was that it, Senator?

Mr. McCUMBER. Of course, there is no telling what the high water mark may possibly be. I wanted to see how far above the mean

water level under present conditions you would have to raise these buildings and raise your basement and sewerage system.

Mr. PICKLES. Under ordinary conditions they will not have to be raised. They function normally now.

Mr. McCUMBER. Yes; but I am assuming that it will be raised here.

Mr. PICKLES. The water level?

Mr. McCUMBER. Yes.

Mr. PICKLES. Well anything up to 499 would not require a raise. From 499 to 500 would require a raise in the basement. 502.8 is the point of the bridge at present.

Mr. WILKIE. I was not going to deal with the bridge, but taking first of all your pump house, and supposing the water level was raised from 497 to 500, which, I understand, is practically what is intended, and which raise would be three feet; what effect would that have on your pump house?

Mr. PICKLES. It would come up to the floor of our pump house, and it would be necessary to raise the pump house to secure safe working conditions above the wave action.

Mr. WILKIE. You have told us of the depot at Ranier. You say that that three foot level would put four or five inches over the level of your floor.

Mr. PICKLES. Over the level of our basement floor.

Mr. WILKIE. What else would take place at Ranier as a result of that raise of three feet?

Mr. PICKLES. The water would be backed up to our grade immediately east of our depot and would soften up the grade at that point. The wave action would cause erosion of the banks and the water standing on the banks would cause softening of the bank and it would be necessary to take care of the track at that point. While the water would not go over the track it would come up to the grade and it would be necessary to put in some protection to take care of this high water.

Mr. WILKIE. You have told us about the line itself. What sort of country does the line pass through now?

Mr. PICKLES. At Ranier the country is the same as it is here; it is rock with muskeg between.

Mr. WILKIE. What is the territory where this elevation is required to be made?

Mr. PICKLES. It is old muskeg.

Mr. WILKIE. Does the water lie there normally?

Mr. PICKLES. No; not at present.

Mr. WILKIE. If the raise were made to three feet what would be the condition?

Mr. PICKLES. An elevation of 500?

Mr. WILKIE. Yes.

Mr. PICKLES. The water would stand about two feet deep along our fill at that point.

Mr. WILKIE. That is, there would be two feet of water alongside your tracks?

Mr. PICKLES. Yes.

Mr. WILKIE. How far would the surface of that water be below the subgrade?

Mr. PICKLES. At that point it would be about five feet. Farther down the line it would not be so much.

Mr. WILKIE. Then, you are speaking about some place where at an elevation of 500 the water would be level with your tracks?

Mr. PICKLES. That is at Ericksburg. At this point the water would come up to within about three feet of the rails.

Mr. WILKIE. Speaking of the territory near Ranier where your line would pass through the water, would that affect your tracks or your operations?

Mr. PICKLES. It would be necessary for us to take care of this water by riprapping or something of the kind. We would have the wave action and the softening action on our grade.

Mr. WILKIE. What sort of fill is that?

Mr. PICKLES. It is blue clay, on timber first and then blue clay on top of it.

Mr. WILKIE. That, you say, would be taken care of by riprapping?

Mr. PICKLES. Yes, sir.

Mr. WILKIE. In this section at Ericksburg you say that a 500 foot level would bring that water up how far?

Mr. PICKLES. About three feet from the track.

Mr. WILKIE. What do you say is required to be done there?

Mr. PICKLES. We would be required to raise our track so we would have five feet above the water level and it would be necessary to riprap the dam to prevent the wave action.

Mr. WILKIE. What sort of fill is that?

Mr. PICKLES. That is blue clay and corduroy.

Mr. WILKIE. Blue clay with a corduroy base?

Mr. PICKLES. Yes.

Mr. WILKIE. Have you made a computation of what it would be necessary to do in order to protect the railroad and make it as safe as it is now?

Mr. PICKLES. Yes, sir; I have.

Mr. WILKIE. I show you a computation here with a view of putting it before the Commission.

Mr. PICKLES. Yes, sir; that is the computation I made.

Mr. WILKIE. Is that correct?

Mr. PICKLES. Well, those are estimates and very conservative estimates.

Mr. MAGRATH. What is the total?

Mr. WILKIE. The total is \$19,090. I will put that in evidence.

Mr. MAGRATH. What is the mileage?

Mr. PICKLES. To mile 155.

Mr. WILKIE. It is all set out in here, Mr. Commissioner. Mr. Pickles, that includes raising the station and the pump house, I understand. Is there anything more, Mr. Pickles?

Mr. PICKLES. Only at Ranier some small expenditure is necessary due to the fact that our depot will be flooded out and the sewerage system will be flooded. It will be necessary to take care of those conditions in some manner, to waterproof the depot and rearrange the warehouse.

Mr. McCUMBER. Will any of this have to be done by you even though there should not be this raise of three feet?

Mr. PICKLES. No, sir.

Mr. McCUMBER. Everything is in perfect order for a good many years, and is safe, so far as you know?

Mr. PICKLES. Yes, sir. In 1916 the water came up to these elevations, but that was only for a short duration.

Mr. McCUMBER. If any changes were to be made now by reason of any increased elevation, you would make it so it would meet any repetition of the 1916 situation?

Mr. PICKLES. Yes, sir.

(WALTER T. MOODIE was called as a witness, and testified as follows:)

Mr. WILKIE. State your full name, please, Mr. Moodie.

Mr. MOODIE. Walter T. Moodie.

Mr. WILKIE. You are in the employ of the Canadian National Railways?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. In what capacity now?

Mr. MOODIE. I am Division Superintendent at Port Arthur.

Mr. WILKIE. And as such what portions of the railroad come under your jurisdiction?

Mr. MOODIE. Between Port Arthur and Winnipeg both the south line and the north line, and east on the north line from Sioux Lookout to Armstrong.

Mr. WILKIE. Then, you have under your jurisdiction two complete lines from Winnipeg to Port Arthur?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. One of which we shall call the north line and the other the south line.

Mr. MOODIE. Yes, sir.

Mr. POWELL. To Armstrong is an addition, is it not?

Mr. MOODIE. It is an addition, yes, sir.

Mr. WILKIE. Then, Mr. Moodie, those two lines, as I understand it, carry all the freight and passenger business you have between Winnipeg and Port Arthur?

Mr. MOODIE. Yes, sir; and east on the trans-continental portion.

Mr. WILKIE. And the eastern through business on the trans-continental, some of which does not go through Port Arthur, of course? Mr. Wilcox has told us that the northern lines carry two passenger trains a day as well as certain fast freight.

Mr. MOODIE. Two trains a day each way.

Mr. WILKIE. And your through freight trains?

Mr. MOODIE. Yes; we term them speed freight trains.

Mr. WILKIE. And your southern line carries a similar number of passenger trains?

Mr. MOODIE. Just as Mr. Wilcox said, we have now two trains daily west of Port Arthur each way and one tri-weekly east of Fort Frances.

Mr. WILKIE. You were present, were you not, when Mr. Wilcox was testifying?

Mr. MOODIE. I was, yes, sir.

Mr. WILKIE. So that your northern route, as Mr. Wilcox said, is about filled with ordinary traffic and has not the same competition for the grain trade as the southern line?

Mr. MOODIE. On account of the handling of the passenger and speed freight trains on the northern line we are not able to handle as much grain.

Mr. WILKIE. We have here, Mr. Moodie, a map of your western lines which I think would perhaps help the Commission to understand the layout of things. This blue line running up here [indicating] to Sioux Lookout is a line that runs away north and does not touch Port Arthur directly.

Mr. MOODIE. No, sir; it does not touch Port Arthur.

Mr. WILKIE. But there is a line that drops south from Sioux Lookout and runs to Port Arthur?

Mr. MOODIE. To the lakehead, yes, sir.

Mr. WILKIE. And you also have a line on this map in red running from Winnipeg through Fort Frances and also coming to Port Arthur?

Mr. MOODIE. To the lakehead, yes, sir.

Mr. WILKIE. And over those two routes pass a great deal of grain in the season?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Also shown on this same map are your western lines. Am I right in assuming that the grain that is gathered by those western lines comes in the main part easterly to Winnipeg?

Mr. MOODIE. Decidedly so, yes, sir.

Mr. WILKIE. And from Winnipeg it passes out over either one or the other of these two north lines?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Then, so as to get that part of it completed, I understand also that the main portion on your lines runs through the northerly part of the different provinces, Alberta, Saskatchewan and Manitoba.

Mr. MOODIE. Yes; the Canadian National system might be described as lying generally north of the Canadian Pacific system in Canada.

Mr. WILKIE. And that, I understand from Mr. Wilcox, is the more newly settled and, therefore, the more rapidly growing portions of those provinces.

Mr. MOODIE. It is so spoken of.

Mr. WILKIE. Do you know it of your own knowledge?

Mr. MOODIE. Only as general information. These statistics belong to other departments than mine. I do believe that is the case.

Mr. WILKIE. You do get statistics, of course, as to the movement of freight from day to day?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Then, what do you say as to the extent of the movement of freight every day along that southern route? How near to your capacity are you?

Mr. MOODIE. I have not got today's figures up to midnight, but it would be in the neighborhood of 600 cars.

Mr. WILKIE. That is, you expect to deliver that many to the lakehead?

Mr. MOODIE. To the lakehead.

Mr. WILKIE. Mr. Wilcox told us that six hundred per day was the capacity of a single line.

Mr. MOODIE. We are just working to the peak at the present moment in the handling of this crop.

Mr. CLARK. How many cars will you have on the road between Winnipeg and the head of the lake?

Mr. MOODIE. At the moment?

Mr. CLARK. Yes.

Mr. MOODIE. I would say we would not have over 1,700, as we call it, in transit.

Mr. WILKIE. How many miles are there?

Mr. MOODIE. Four hundred and thirty-seven miles on the south line.

Mr. WILKIE. So as to get some information which will be useful, what is the average size of a grain car?

Mr. MOODIE. The average capacity?

Mr. WILKIE. Yes.

Mr. MOODIE. They vary. We have standard cars of 60,000 pounds on which we are allowed to handle a ten per cent over-capacity, and we have a few heavier cars, but I have made some computation of the average car which we have handled over the Fort Frances subdivision, which is the subdivision between Rainy River and Antikokan on which this strip of the line under discussion is located, and the average gross weight of contents and tare amounts to 54.6 tons. That is made up of 18.3 tons of tare and 36.3 tons of content. That is the average weight of a car over a period of months taken from our records.

Mr. WILKIE. That means with 54 tons of wheat?

Mr. MOODIE. No, sir; 36.3 tons of grain.

Mr. WILKIE. And you have made a computation of the average number of cars you could take in a loaded train between those two points?

Mr. MOODIE. The power that we are handling on the Fort Frances subdivision between Rainy River and Antikokan is a new type of engine. These engines are handling east of Fort Frances at the present time an average of 58 cars to a train. These 58 cars are each 54.6 tons in total weight. They are 2,000 pounds to the ton.

Mr. WILKIE. Just so we will understand what we are dealing with, is the line from Winnipeg to Port Arthur of uniform capacity?

Mr. MOODIE. Uniform capacity in engines?

Mr. WILKIE. I mean, could you start out at Winnipeg with a full load and take that full load to Port Arthur?

Mr. MOODIE. Not with the same engine.

Mr. WILKIE. In some portions of it the grades are not good?

Mr. MOODIE. The grade is against eastbound movement.

Mr. WILKIE. Just tell the Commission exactly how it works.

Mr. MOODIE. I will read from a tonnage rating. It is rather a big subject, but I will try to make it as simple as I can. As Mr. Collinson explained, we have different classes of engines on the three subdivisions. They are so designed to handle the maximum tonnage on each division, and consequently, a train of about the same number of cars, although that is not possible. East from Winnipeg we will take a 55 percent engine. I am speaking of the southern line. On the southern line operating a 55 percent engine with booster there is one stretch from Paddington, three miles east

of Winnipeg, that would handle 4,270 equated tons. Then from Woodridge we will pass through Rainy River and come down to Bear's Pass, which is east of Fort Frances. From Winnipeg to Woodridge the same type of engine as we are handling on the Fort Frances subdivision would handle 4,270 equated tons. The same engine should handle 4,635 tons from Woodridge to Bear's Pass. From Bear's Pass to Antikokan, the division point east, it could only handle 3,780 tons. From Antikokan to Huronian it can handle 3,325 tons and from Huronian to Nebin, which is the distributing yard just outside of Port Arthur, it will handle 5,250 tons. Therefore, the same engine would not handle the same train if it were of maximum capacity for, say, the first subdivision.

Mr. CLARK. Then, in starting out your grain I assume that your entire train will be made up of grain cars?

Mr. MOODIE. It is a solid train of grain cars.

Mr. CLARK. In making up your train at Winnipeg do you make it up to go clear through?

Mr. MOODIE. No, sir.

Mr. CLARK. How far do you take the full train that you have started?

Mr. MOODIE. The first engine will go only as far as Rainy River.

Mr. CLARK. I am not speaking of the engine. I am speaking of your load.

Mr. MOODIE. You mean the train?

Mr. CLARK. Yes.

Mr. MOODIE. I must answer your question by saying that the same engine will not take it through. There is a smaller engine on the subdivision between Winnipeg and the Rainy river because a smaller engine on that stretch can handle what a larger engine can handle east.

Mr. CLARK. Perhaps I was a little obscure in my statement. How many cars do you start with out of Winnipeg?

Mr. MOODIE. They run from 56 to 60 cars.

Mr. CLARK. Suppose you start out with 56 cars at Winnipeg. How many of those cars would you deliver at the head of the lake?

Mr. MOODIE. They will all be delivered at the head of the lake.

Mr. POWELL. You would not break the train?

Mr. MOODIE. It may have one or two cars on its head or tail end, depending on how it went into the yards and was re-made up at Rainy River and Antikokan.

Mr. WILKIE. May I help you, sir?

Mr. CLARK. Yes.

Mr. WILKIE. Mr. Moodie, the chairman of the Commission wants to know just exactly what I wanted to know of you. When you

start out do you break up your train and rearrange your cars, or do you go through solid?

Mr. MOODIE. I will explain the operation and then you can deduce how we do it. There is always an accumulation at division points of from fifty to three or four hundred cars. We have two such points. Rainy River is the first division point east of Winnipeg and Antikokan is the second. The engine from the west brings in its train of grain from Rainy River and the engine gets off and goes to the shop and the new engine takes it to Antikokan. It takes its full quota out of Rainy River irrespective of whether that train was brought in intact as a train from Winnipeg or not. Its tonnage will be put on behind a tender at Rainy River which it takes east to Antikokan where it in turn takes out its train.

Mr. WILKIE. Where does this tonnage come from?

Mr. MOODIE. There is no extra tonnage. You asked me what one type of engine could handle from Winnipeg to Port Arthur, and I showed you that there were sections on the line where that engine would handle more or less tonnage than at others due to gradients only.

Mr. POWELL. Where are the extra cars that you pick up?

Mr. MOODIE. We get them at the yard.

Sir WILLIAM HEARST. He stated that that is true where there is an accumulation of full grain cars at division points.

Mr. MOODIE. And sometimes between division points in order to fill out the train to its tonnage.

Sir WILLIAM HEARST. So an engine is always pulling its full capacity?

Mr. MOODIE. That is our aim at all times.

Mr. CLARK. You put on two extra cars at this point?

Mr. MOODIE. Yes, sir.

Mr. CLARK. Where do these two extra cars come from?

Mr. MOODIE. From that little accumulation of cars at Rainy River. They are cars that come from Winnipeg, cars of grain.

Sir WILLIAM HEARST. They are dropped off where your engine could not carry them farther?

Mr. MOODIE. We have places where five trains from the west will make up only four trains to the east. We have to have always what we call a bank.

Mr. WILKIE. You have told us about the south line, Mr. Moodie. What about the north line? Is it also operating to capacity?

Mr. MOODIE. It is also operating to capacity.

Mr. WILKIE. In your position, what do you say as to how long this year that condition of operating to capacity is likely to continue?

Mr. MOODIE. Well, I have every reason to expect that history will be repeated and we will be moving grain to capacity until about the 8th or 9th of December, possibly to the 12th or 13th of December if the weather is fair enough. Navigation goes off on the 12th of December normally, but the movement of grain will slacken during the period that navigation closes, and will resume when navigation reopens with renewed vigor. I would say that almost invariably the old crop overlaps the new one.

Mr. WILKIE. About how many miles of road have you west of Winnipeg?

Mr. MOODIE. It should be about 10,000 because there are 11,000 miles, I understand, in the western region, and my territory is just a little over 1,000.

Mr. POWELL. May I ask a question more for information than any relevancy it may have to this matter? Is the uniform grade of .4 from Winnipeg to Port Arthur?

Mr. MOODIE. No, sir; it is not a uniform grade of .4 against east-bound traffic. There is something greater than that. Some is .5 and some is .58.

Mr. POWELL. The whole scheme contemplated a .4 grade and that was not carried out?

Mr. MOODIE. I thought you were speaking of the south line. The original scheme was a .4 grade and it was observed on the transcontinental.

Mr. WILKIE. Mr. Moodie, if there were an increase in the grain offering would you with those two lines handle it at present?

Mr. MOODIE. We are running to capacity at this present moment and we were doing so in the fall of 1923. That was a heavy crop movement also, a capacity of about 600 cars each way is a very heavy movement for a single line. I would not be prepared to say that we could handle 600 cars a day week in and week out. There are some days when it goes better than others. I think the average is less than 600 as the capacity.

Mr. WILKIE. I suppose sometimes you do have stoppages on the line?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. What is the effect of that?

Mr. MOODIE. Well, there is a very thoroughly bad effect felt both east and west. Side tracks get blocked. If it is only an hour or an hour and a half it is not nearly so serious as if it runs into seven, eight or nine hours, and we have to stop dispatching trains out of tunnels on each side because the line at all times just now is very heavily charged with trains. In riding from Port Arthur to Winnipeg in a passenger train I have met 29 eastbound trains on a trip.

So we met a train about every thirty minutes all the way from Port Arthur to Winnipeg. That was in 1923 and the same condition prevails today.

Mr. WILKIE. But if you were blocked up anywhere you would be blocked up east and west of that point?

Mr. MOODIE. When traffic is as heavy as it is now it is a very serious matter for us. The expense increases rapidly.

Mr. WILKIE. Of those cars that move to Port Arthur have you made a computation of the average earnings of the grain cars that end at Fort William?

Mr. MOODIE. I made an inquiry of our freight traffic manager a few days ago as to the average earnings. It is only an indicative figure. He advised me that the average earnings on a car of grain to the lakehead was, I think, \$162 and some cents.

Mr. WILKIE. So if you on this south line were delivering 600 cars a day your daily earnings from grain alone would be something in the neighborhood of \$100,000?

Mr. MOODIE. About that on the south line.

Mr. WILKIE. In routing cars which have arrived at Winnipeg, have you made any distribution of them between the north and the south lines?

Mr. MOODIE. Only as regards quantity; if destined to the lakehead, only as regards the number of cars. We load the south line heavier than the north line on account of the fact that speed trains and passenger trains on the north line consume a good deal of the time of that route.

Mr. WILKIE. That is, the south line, so far as grain hauls are concerned, carries more than the north line?

Mr. MOODIE. About 60 percent of the grain travels on the south line and 40 percent on the north line, up to 900 cars per day. Both are taxed to the limit.

Mr. WILKIE. We have been told by Mr. Watson that the production of grain, livestock, poultry and other things in the three prairie provinces is increasing at a rapid rate. Can the lines as you have them now deal with that increase, and, if not, what is to be done?

Mr. MOODIE. There is only one thing in sight; we will have to increase such double track as we have to carry more traffic because both roads are taxed now under such conditions.

Mr. WILKIE. You have told us that you have some double track on that south line.

Mr. MOODIE. Yes, sir; we have a stretch of double track from Conmee to the lakehead, a distance of 36 miles. The north line and the south line converge at that point.

Mr. WILKIE. By the way, Conmee reminds me not merely of a man but also of a bridge.

Mr. MOODIE. It is called after the township.

Mr. WILKIE. I understand you have bridged the Canadian Pacific railroad there.

Mr. MOODIE. Yes.

Mr. WILKIE. Your line then passes over the Canadian Pacific?

Mr. MOODIE. It does.

Mr. WILKIE. Do you know what the Canadian Pacific made you provide in the way of tracks for that bridge?

Mr. MOODIE. Yes; they made us span the track through the entire right of way, which we did by a large steel span.

Mr. WILKIE. The Canadian Pacific now has two tracks and they made you make your bridge wide enough to cover four?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Where else on that south line have you double-tracked?

Mr. MOODIE. We have a small piece of double track seven miles in extent in Manitoba. That is shown on the map here. That was completed last summer and was in operation in the fall of 1924.

Mr. WILKIE. Where else have you any double track?

Mr. MOODIE. We have no more double track east of Winnipeg on the south line.

Mr. WILKIE. Have you any provision for any more double track?

Mr. MOODIE. Yes; there is a stretch across the big fill on Rainy lake.

Mr. WILKIE. What about your bridges there?

Mr. MOODIE. All of our steel bridges on the south line are double-tracked, with exception of the international bridge at Rainy River. That includes the steel bridges on the piece of track which crosses Rainy lake.

Mr. WILKIE. Then, I think that covers the point of our gradients and the traffic we have to provide for. Mr. Moodie, I understand that you are a trained engineer?

Mr. MOODIE. Yes, sir, I served my apprenticeship as a civil engineer and followed the profession of engineer for a number of years.

Mr. WILKIE. I understand you had to do with this railroad line that we are concerned with here from Rainy River down to past the place where your line touches Rainy lake.

Mr. MOODIE. Yes. I have been associated with this line since 1909, that is for sixteen years.

Sir WILLIAM HEARST. With the old Canadian Northern?

Mr. MOODIE. Yes.

Mr. WILKIE. At first, what was your position in regard to this piece of railway that we are now dealing with?

Mr. MOODIE. I was assistant engineer of maintenance from 1908 until the end of 1917 and then I was district engineer up to the first of January 1919. Since January, 1919, I have been division superintendent and located at Port Arthur.

Mr. WILKIE. What do you say as to the double tracking of either of these roads?

Mr. MOODIE. When the time comes to double track, it will be the south line on which all our plans are being discussed.

Mr. WILKIE. Why the south instead of the north?

Mr. MOODIE. There is a stretch of the north line from Sioux Lookout to west of Minaki where there is very heavy rock work and high embankments that could be double tracked only at prohibitive expense. That leaves the only double tracking possible on the south line.

Mr. WILKIE. What do you say as to the prospects of double tracking?

Mr. WILCOX. With the increased traffic we are being called upon to handle from year to year, we have made representations to the management that double tracking should be started at a very early date. It is my hope that those recommendations will be carried out looking towards having our double track built as soon as we can get it built.

Mr. WILKIE. Perhaps you would require to be a financial as well as a railway prophet to know when that time will be likely to arrive.

Mr. MOODIE. Well, we will be expected to handle the crops offered us on our branches and we will have to handle them, otherwise we will be subjected to criticism. There is only one relief to get and that is to double track one or other of the lines and prudence would dictate that the south line should be double tracked, and I see no alternative but to double track it either in whole or in part.

Mr. McCUMBER. You will have to do that double tracking sooner or later whether there is any raise in the levels of the lakes or not.

Mr. MOODIE. Our increasing demands make that imperative.

Mr. McCUMBER. I suppose this only bears on the cost in case there should be any raise in the levels of the lakes. Could we get right down to that?

Mr. WILKIE. Yes. It has been suggested that the level of Rainy lake be raised some three feet. Would that affect the line of this railway?

Mr. MOODIE. It would affect the safety of the line across Rainy lake.

Mr. McCUMBER. You cross on a number of islands from one island to another?

Mr. WILKIE. Yes. We have a profile here before us which we will put in, and commencing at the Winnipeg end, on what part of the line shown on the profile would that raise first affect your right-of-way?

Mr. MOODIE. It would affect the track immediately you enter on Rainy lake, in fact a little before. There is a low part of the grade west of old mileage 229.2. There is a little sag close to the Border Lumber Company. We had to lift that sag when the high water was with us in 1916.

Mr. WILKIE. What mileage would be affected there?

Mr. MOODIE. It would depend on to what elevation it would be required to lift the line.

Mr. WILKIE. I was dealing with three feet.

Mr. MOODIE. The probable water level is 500. That is the level to which the dam was proposed to be raised.

Mr. WILKIE. I do not know if that is correct.

Mr. POWELL. If we could get the level of the embankment and then the level of the water, we would have something to work from.

Mr. WILKIE. What is the level of your road on the public works datum?

Mr. MOODIE. It will mean a tremendous amount of figuring to give that.

Mr. WILKIE. You say that a raise to P. W. D. 500 would endanger the portion of your line at mileage 229?

Mr. MOODIE. That part would have to be raised some two or three feet above what it is now. Probably about three feet.

Mr. MAGRATH. At about what station is that?

Mr. MOODIE. It is about three miles east of Fort Frances, just before you strike the lake.

Mr. McCUMBER. Would you have any difficulty in raising that?

Mr. MOODIE. No. It is a little drop.

Mr. McCUMBER. Just filling in a little.

Mr. MOODIE. Yes, it would not be serious.

Mr. WILKIE. First of all; can you tell me whether the general water level has been affected by the erection of the present dam? You were here before the dam was built, were you not?

Mr. MOODIE. No. The dam was completed just about the time I came to this part of the country, so that I have not seen the conditions of the railway before the dam was built.

Mr. WILKIE. Then you cannot perhaps tell us of your own knowledge?

Mr. MOODIE. Not from my own observation.

Mr. WILKIE. Following along the profile eastward what is the next point at which the raise would affect the line?

Mr. MOODIE. You enter on the Rainy lake proper where we encounter what is commonly known as the big fill. In 1913-14 the railway built a very large rock fill about two miles in length over a portion of Rainy lake that had previously been crossed by a timber trestle, and that rock fill was built over a period of some twenty or twenty-four months.

Mr. BACKUS. What is the elevation of that rock fill?

Mr. MOODIE. You wish the lowest elevation of it?

Mr. BACKUS. It is all supposed to be level?

Mr. MOODIE. No.

Mr. WILKIE. Perhaps if Mr. Backus would wait a little while, we will go into the details and work it out.

Mr. MOODIE. The engineers are handling the levels much more than I am in this particular matter. I can give it to you later.

Mr. WILKIE. Before you come to the big fill, you have a trestle bridge.

Mr. MOODIE. There are two steel structures fairly close to the crossing.

Mr. WILKIE. What are those steel trestles?

Mr. MOODIE. The first one is a fixed span known as the log span. That is a trestle. The second is a little further east and is a lift span in order to enable vessels to pass through and tows of logs, launches and so forth used for navigation. Those are the only steel structures on that portion of Rainy lake.

Mr. WILKIE. Passing over that you come to the big fill?

Mr. MOODIE. Yes.

Mr. WILKIE. One of the steel bridges is a lift span?

Mr. MOODIE. The more easterly of the two is a lift span.

Mr. WILKIE. Is that for a double track?

Mr. MOODIE. It was built for a double track although there is only one track operated over it.

Mr. WILKIE. The rails are on it?

Mr. MOODIE. Yes, but it is operated only as a single track.

Mr. WILKIE. The stand-off, is that double track?

Mr. MOODIE. East of the lift span there is the main line and a passing track, a long extension for passing cars. It was all built double at the time of construction.

Mr. WILKIE. You did not describe it as a double track.

Mr. MOODIE. Because it is not so eastward.

Mr. WILKIE. Passing on eastward, what do we next come to after you cross the big fill? Are there any places that will be affected by the raise?

Mr. MOODIE. There were two large timber trestles towards the east end of this main crossing, one of which was entirely filled last year and the second was almost entirely filled.

Mr. WILKIE. What place do you call that?

Mr. MOODIE. That is just west of Rocky Inlet or 227 A and 227 B were the numbers of those bridges.

Mr. MAGRATH. What is the greatest depth of lake that you crossed?

Mr. MOODIE. About 95.

Mr. MAGRATH. That you filled?

Mr. MOODIE. Yes. Our fill at one point is 107 feet as I recall it. It is about 350 feet wide on the bottom, 32 feet wide on the top.

Mr. McCUMBER. The width of the crossing is how much?

Mr. MOODIE. It is a little more than two miles in extent. It is not filled all the way. In some parts it goes over islands.

Mr. McCUMBER. As I understand, instead of trestling these gaps between the islands you filled them in?

Mr. MOODIE. To make that clear, we had a line which trestled between islands and then we revised that line and built a fill on it.

Mr. McCUMBER. Filled right over the trestles?

Mr. MOODIE. No, we revised the line. We took another line running south of the trestle line and built a fill over that. That was built as a rock fill at the start and we had to operate the trestles until the day we abandoned it and swung over to the rock fill.

Mr. WILKIE. Do you know roughly what that rock fill cost?

Mr. MOODIE. It cost to my recollection about a million and a quarter. I was not on it personally. It was given to the construction department.

Mr. CLARK. If that is a rock fill, what effect would the raising or the lowering of the water have on the fill?

Mr. MOODIE. The lowering of the water would have no effect, but the raising would have an effect in respect to the safety of operating over the fill. What prompts me to say that is that at that point where the rock fill crosses the lake there is a very exposed stretch of the lake, there is clear water for some five, six or maybe seven miles lying north of the fill, and the waves get very high up on the surface of the lake when the wind is from the north and these are our heavy winds. The water frequently washes up to the top of the fill and it was reported to me that only nine or ten days ago the rails were wet with that heavy spray going over. It was more than light spray, it was heavy spray going over the top of the fill.

Mr. CLARK. If the water was raised, you think you would have that much worse?

Mr. MOODIE. Yes, and if at this season of the year there is nothing to be apprehensive about as regards water washing against or over the fill, we have a period of about three weeks in the fall when the weather is very cold but the lake is not yet frozen over when the ice forms as a result of that spray.

Mr. McCUMBER. On the rails?

Mr. MOODIE. No. I wish to make it clear I have no personal knowledge of ice forming on the rails, but one of my confreres in the railway states that he has seen ice on those rails due to spray blowing over from a fall storm. I have not seen that myself but I have seen ice up very close to the track.

Mr. McCUMBER. Would a three foot raise in the level of the lake require a three foot raise in that fill?

Mr. MOODIE. I consider it would so require because the elevation of that grade, I think, was carefully selected and even at its present elevation we do get storms in the fall when the ice is not yet formed in the lake and the ice forms up on the slope close to the ends of the ties.

Mr. CLARK. I was going to follow out my question when something else interrupted. Would your present fill there be injured in any way by raising of the lake?

Mr. MOODIE. The fill itself, leaving aside the operation of the railway?

Mr. CLARK. Yes.

Mr. MOODIE. No. I do not think anything would injure that fill—the rock portion of it.

Mr. CLARK. That was my idea, yet I rather gathered the idea from one of the engineers, I think, that it would be necessary to protect the works on the lake.

Sir WILLIAM HEARST. That was a very different point.

Mr. WILKIE. That was a different point.

Mr. CLARK. Let me get through with my question, if you will. I was going to ask you if that was not with respect to this fill, where it was.

Mr. MOODIE. It would be affected if the water was raised.

Mr. CLARK. Yes, and you would require additional riprapping.

Mr. MOODIE. There are several points east, particularly at what is known as Ottetail bridge.

Mr. CLARK. Is that on the same lake?

Mr. MOODIE. Yes, it is a lagoon of the lake. It is joined water with Rainy lake. It is at the extreme east end.

Mr. CLARK. As regards the action of the water on the fill, would it be sufficient if you raised your fill?

Mr. MOODIE. Commensurate with the raise of the water.

Mr. CLARK. You have sufficient surface on the top to do that.

Mr. MOODIE. No, we have not. In the process of raising, it would also have to be widened.

Mr. CLARK. You would have to widen it?

Mr. MOODIE. Clear to the bottom. We have a width of 32 feet on the top. That is the double track width and if it were simply raised on top then we would not have enough for double track width.

Sir WILLIAM HEARST. I suppose you made it a greater width than was necessary for safety when it was constructed?

Mr. MOODIE. We did not anticipate anything other than this permanent dam which was constructed at International Falls.

Mr. WILKIE. This road itself was built before the dam that is here and the dam was built before the rock fill was made. To get the relationship in, I think it is important that should be told.

Mr. BACKUS. Right there, maybe it would be possible for me to suggest that before the road was built at all, the promoters, the owners, Mackenzie and Mann, knew that our plans made in 1900 contemplated putting three feet of flash boards on and raising the lake to 500.

Mr. WILKIE. I do not agree with that at all. I have heard that statement but it is absolutely erroneous. I know on what slender pinnacle that pyramid is built. It is a mighty small pinnacle and a mighty big pyramid.

Mr. BACKUS. When I say I had a conference with Messrs. Mackenzie and Mann in 1900 in the Ryan Hotel, St. Paul, and showed them the plans, my statement will have to be considered as of value.

Mr. WILKIE. When you make it, we will deal with it.

Mr. CLARK. I was not out with these gentlemen on Sunday, but what is the total length of your track across the lake? What is the length of this rock fill that you speak of?

Mr. MOODIE. It is about 24 miles from the east end to the west end where we are affected by Rainy lake, and the fill is a little over two miles in extent from end to end.

Mr. CLARK. What other fill have you there?

Mr. MOODIE. There are 24 miles of our track and road affected from one end to the other by Rainy lake. Just east of Fort Frances it crosses parts of Rainy lake and at the most westerly end of the crossing we have the rock fill which occupies about two miles.

Mr. POWELL. Do you mean there are 24 continuous miles of that railroad that are affected?

Mr. MOODIE. No.

Mr. POWELL. You are sure about two miles?

Mr. MOODIE. Yes. Some parts of those 24 miles are at a higher elevation than others. There are some parts we are away from the

side of the lake, but a little east of that you come within sight of the lake again.

Mr. POWELL. About how many miles will be affected if the contemplated increase in elevation is made?

Mr. MOODIE. I would have to work up quite a lot of information to give that.

Mr. POWELL. Can some of the engineers give that?

Mr. MOODIE. Yes.

Mr. WILKIE. We will work it out in a different way that will serve your purpose completely. I do not want any misunderstanding to get into anybody's mind, but as I understand it this fill is not a continuous fill for two miles.

Mr. MOODIE. The line was located striking a few rock islands. We struck off of those islands in order to cut down the rock fill, but for the most part it is practically continuous.

Mr. WILKIE. But here and there in it there are islands occurring over which the track runs.

Mr. MOODIE. Yes.

Mr. WILKIE. And where those islands are, they are solid rock?

Mr. MOODIE. Yes. There is no effect there as regards the raise of water.

Mr. WILKIE. Going on past the big fill you come to another spot where you said it was next affected.

Mr. MOODIE. It was affected on the old 227A bridge as it was known, just west of Rocky Inlet. This present summer—I was not able to riprapp the north side last year when I filled it, but I had to do it this year on account of the material being partly washed out where it was exposed to the north wind.

Mr. WILKIE. If the water level is raised three feet, what effect will it have on that?

Mr. MOODIE. At the time I riprapped there, I did not expect any raising of the water and I would, partially at least, have to add to that.

Mr. WILKIE. What was the material in that fill?

Mr. MOODIE. Fairly fine material. I took that out with the steam shovel.

Mr. WILKIE. Passing on, what do we come to next?

Mr. MOODIE. We go through Rocky Inlet. That is where the line is shown on the profile. There is a stretch east of Rocky Inlet. On the profile it is shown from mile 223 to mile 221.

Mr. WILKIE. It includes all of mile 222 and mile 221?

Mr. MOODIE. Yes, and east thereof. There is a small tip here, but say down to mileage 220.

Mr. WILKIE. What is the condition there?

Mr. MOODIE. We traverse along the side of the lake. The line passes along the side of the lake at that point and if the water were raised up to 500 we would have to raise our grade somewhat, varying heights of course to the present height of the grade, but we would have to raise it up higher over that whole stretch. That would take a considerable amount of filling and protection.

Mr. WILKIE. What is the material of the fills in that stretch?

Mr. MOODIE. The original construction was rock cut and borrowed material such as gravel and clay and there was ballast put on top taken from ballast pits and a good portion of the slopes had been riprapped to protect them.

Mr. WILKIE. What do you say as to further riprapping if the water level were raised?

Mr. MOODIE. We would have to add to the present riprapping because that three feet raise in the water would have to be taken care of.

Mr. WILKIE. Going on from mile 220 still eastward, where do we next come to a portion of the line that would be affected by this raise?

Mr. MOODIE. Mileage 219 through Sim's passing track to a point just east of Sim's passing track. You can call it mile 217 on the profile. That is alongside of the lake. Sim's passing track is alongside a little arm of the lake. The track would have all to be treated in the same way, raised commensurate with the proposed raise. The dotted line shows the elevation that is proposed.

Mr. WILKIE. In some places the dotted line is a little below the old profile line.

Mr. MOODIE. If it is above the old base of rail, at those places the rail would not be affected. Where it is above the present base of rail, it would have to be raised.

Mr. WILKIE. Would riprap be needed there?

Mr. MOODIE. There is a stretch west of there would require to be riprapped and, passing through, Sim's passing track would need to be riprapped on one side. The lake is only on one side.

Mr. WILKIE. Going on from mile 217 still eastward.

Mr. MOODIE. I do not think there is any effect there for quite a while. There is a small piece here coming down to Nickel lake at mileage 215 which is not of any importance.

Mr. WILKIE. Has to be raised?

Mr. MOODIE. It is of the same description, yes. From Nickel lake a short distance east a little riprapping would require to be done there and the east half of Nickel lake passing tracks and a little east would require to be raised.

Mr. POWELL. How much?

Mr. MOODIE. About a mile in extent would require to be raised. Then we come down to what we know as the Bear's pass, on mileage 210 B. That is a steel lift span and a fixed log span immediately adjoining and east of it. That is a lift span of somewhat the same type as the lift span at Rainy lake.

Mr. WILKIE. Do you know what the clearance under that lift span is?

Mr. MOODIE. No, but I can get it for you.

Mr. WILKIE. We will get it later. There is a lift span and a log span there to.

Mr. MOODIE. Yes, it is a 50-foot span and an 80-foot log span. I can verify those figures.

Mr. WILKIE. What do you say as to the necessity of raising that bridge and the log span at mile 211?

Mr. MOODIE. The bridge would have to provide head room for navigation. We are called upon to operate this lift bridge all during the period of navigation 24 hours a day and the bridge would have to be up a certain height in order to allow boats to pass under the bridge span. That would force the bridge to be raised. I suppose it is at the minimum, so I suppose whatever raise is made to the water permanently, there would have to be a raise to the bridge permanently.

Mr. CLARK. How is it constructed?

Mr. MOODIE. It is a roller lift.

Mr. CLARK. Have you got a frame above the lift?

Mr. MOODIE. We have a counter weight and the gas engine operates the lift.

Mr. CLARK. It is not sufficiently wide to leave an open space from water to sky?

Mr. MOODIE. It rises to an angle of about 70 degrees.

Mr. CLARK. But it would not leave enough for passageway for navigation through.

Mr. MOODIE. You see the head room is so little between the bottom of the girders and the water level that we have to lift that bridge. We are obliged by law to furnish navigation opening there.

Mr. CLARK. Yes, but my question was: When the necessity arises, you lift the bridge. Now, are you under any obligation to keep head room when the bridge is not lifted?

Mr. MOODIE. Well, it is just a question of whether it would be safe to allow the water to come up that close to the lower part of the structure, that three feet extra raise that is proposed, or more if more was brought about.

Mr. POWELL. Unless there is something exceptional, three feet added to the height of the structure on each side would suffice.

Mr. MOODIE. If it were practicable to lift it the three feet.

Mr. POWELL. Three or four jacks on each side would lift the truss, would it not?

Mr. MOODIE. No, I do not think it would.

Mr. POWELL. You think it would be too heavy a weight for it?

Mr. MOODIE. Dwelling for a moment on the question of raising the bridge, I do not quite see how the bridge could be lifted. It has been said by someone that these bridges can be lifted—I am speaking about under traffic. If you are able to stop traffic, you can do anything; but if you are obliged to keep traffic going on the railway, what you can do is limited and I would not like to undertake to lift the bridge under traffic.

Mr. McCUMBER. Would not a three-foot raise of the water bring part of the mechanical equipment below the water?

Mr. MOODIE. Yes, that is one of the factors that would make it necessary to raise the bridge if this contemplated raise is brought about.

Mr. CLARK. How would you deal with the situation under traffic if you could not deal with it as suggested by Mr. Powell?

Mr. MOODIE. All things are not possible, and I do not know really what I would do. Personally I would not undertake to lift the bridge under traffic. If I were ordered to do the work, I would ask the contractor who built the bridge. We did not build the bridge ourselves. I would call the contractor who built it into consultation and use every possible safeguard to be relieved of any tie-up.

Mr. CLARK. You have not any definite knowledge how it would be accomplished?

Mr. MOODIE. No, I have given it some consideration, but I cannot suggest any way. I would have to consult some who are better equipped to handle the bridge than I am.

Mr. WILKIE. Shown on this map, Mr. Moodie, is the plan of the lift span on the Rainy lake bridge.

Mr. MOODIE. You will find in pencil there 500 P. W. D. That is the level to which it is now proposed to raise the lake. If you will follow the line of that level to the left of the observer you will find that that level is above a part of the bearing pier and is above that part of the bearing pier in which the mechanism is put.

Mr. WILKIE. The mechanism is on the shoulder of the bearing pier but the 500 level would flood the machinery of the bridge.

Mr. POWELL. Can you tell me how far the top is along this stretch generally above ordinary high water mark in the lake at the present time?

Mr. MOODIE. Ten point one feet from 497 gives the base of rail as originally constructed.

Mr. POWELL. How about the rock fill that you people constructed afterwards?

Mr. MOODIE. I am speaking of that as it is now. There has been a little settlement which we would be required to bring up to its original grade.

Mr. POWELL. How far is the top of the ties and how high is the base of the rail above the water level of 497?

Mr. MOODIE. In some places it is 5.5 feet, 6 feet, 7 feet, etc.

Mr. POWELL. The lowest would be about five?

Mr. MOODIE. Five point nine at the Ottertail bridge.

Mr. POWELL. And you say at these points the wind has an effect?

Mr. MOODIE. No, sir; not outside of the big fill. That is the only stretch of lake that is really exposed to the north wind.

Mr. POWELL. Yet this north wind has a range of the whole lake?

Mr. MOODIE. There is a sweep of some seven or eight miles bearing against the rock fill stretch. We have measured between five and six feet of the top of the crest.

Mr. WILKIE. You have shown us about the waves washing right over the top?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Now, let us get back to this bridge.

Mr. BACKUS. Did I understand you to say, Mr. Moodie, that the rock fill was 507 or 509?

Mr. MOODIE. The base of rail constructed was 507.1 to rock fill.

Mr. WILKIE. Getting back to your description of the Rainy lake lift bridge; you have told us, I think, that the raising of the water level there would bring the water above the base of the foundation on which the machinery rests.

Mr. MOODIE. Yes; it affects there part of the operating machinery.

Mr. WILKIE. What do you say as to the safety of operating under those conditions?

Mr. MOODIE. Well, there are frequently loose logs, isolated logs, and bark in that lake. There is a very heavy current through the opening and you can see these logs, etc. going through. We have actually gotten debris in the machinery of the bridge. If the water level were raised I can not help thinking that that condition would be accentuated, which forces me to the opinion that it would be necessary to raise the bridge if possible.

Mr. POWELL. You could not protect it, you think, by any netting?

Mr. MOODIE. No, sir; not as a permanent thing because the logs that go through there are sometimes drawn through by tugs. Fre-

quently booms are taken through, and I do not think netting would be strong enough to protect the logs.

Mr. WILKIE. Let us understand what takes place. I understand that through that bridge or under the rails at that point pass all the timber that Shevlin-Clarke Company sort.

Mr. MOODIE. There is some taken through there. I am not able to state whether all of those logs go through there, but it is my belief that they do. They are towed through by tug which requires more head room afforded by the log span.

Mr. WILKIE. You have spoken about raising this. If you look at the drawings you will see, I think, in a moment what the difficulty is, but will you just tell the Commission what is the difficulty in raising that bridge?

Mr. MOODIE. The traffic on the line would certainly have to be maintained continuously if the bridge is raised and it would present difficulties that I would not be competent to cope with; I am satisfied of that; if we were called upon to raise the bridge under traffic. I assume, of course, that advantage would be taken of the winter when there is no navigation. That would relieve the bridge of having to be opened. That, of course, has its advantages. The liability of accident is very great in a problem of that kind and we can not afford to take any chances of accident with the main line. Our main line means too much to us. I do not know why a problem so nearly impossible should be placed under our charge to perform. If some other means could be taken to overcome it, I personally would be extremely glad to hear of it, but I frankly do not see the possibility of raising that bridge and maintaining traffic on the railway.

Mr. CLARK. Suppose your traffic were interrupted, how long would it take, in your opinion, if you care to give any opinion, for the raising of the bridge?

Mr. MOODIE. I would much rather say that I could not answer that question.

Mr. CLARK. You have no opinion to express on that?

Mr. MOODIE. I could not say. For one thing, Mr. Chairman, I think the counter-weight would have to come off. If it had to be removed that would force us to do it in the winter season.

Mr. CLARK. Do you know about how long it took to put in this bridge?

Mr. MOODIE. It took over a year to build that bridge.

Mr. CLARK. That was when you were operating the old line?

Mr. MOODIE. We were not operating on this line then.

Mr. CLARK. But you had a line that you were on when you were building this bridge?

Mr. MOODIE. Yes; some four hundred or five hundred feet away.

Mr. WILKIE. So during the construction the building of the bridge was not interfered with at all?

Mr. MOODIE. No.

Mr. WILKIE. Do you know about what the depth of water is underneath the span of the bridge? Would it be about as shown on the plan?

Mr. MOODIE. Yes; it is something over twenty feet below the bed at the east end.

Mr. WILKIE. You have this Rainy lake bridge with a lift span. You have spoken to us about the Bear's Pass bridge, and I think attached to this plan is one of the Bear's Pass bridge which is also a lift span, is it not?

Mr. MOODIE. Yes; that is a drawing lift span. We have also a lock immediately adjacent to it.

Mr. WILKIE. The Bear's Pass bridge is a smaller bridge, is it not?

Mr. MOODIE. It is a little shorter.

Mr. WILKIE. Does what you said about the Rainy lake bridge apply to the Bear's Pass bridge?

Mr. MOODIE. The same remarks, in so far as the feasibility of lifting that bridge is concerned, apply to the Bear's Pass bridge. The problem is a little complicated by the fixed span east, although that of itself is not a hard thing to lift. We have a fill immediately east of that bridge which was up until the summer of 1924 a pile trestle and we undertook to fill it. We put in over three times the amount of filling that we computed it would take and it cost us about three or four times what we figured it would cost and the traffic was impeded for almost two weeks. That was in the summer season. It was impeded to the extent that we had to shove the trains over. I am stating this to show the uncertainty with which all of this work is carried on. We had soundings made and we believed that the bottom was good, but the fill went out twice. We ultimately put in about 65,000 yards when we had thought we could get by with 18,000 yards.

Mr. WILKIE. Then at Bear's Pass and Rainy you have another steel bridge?

Mr. MOODIE. That is a lock span.

Mr. WILKIE. The lock span we have told about. That, you say, is solid and would not present much difficulty? Those are all steel bridges on the main line?

Mr. MOODIE. Yes.

Mr. WILKIE. At Pithers Point there is another steel bridge?

Mr. MOODIE. Yes.

Mr. WILKIE. What do you say about the Pithers Point bridge?

Mr. MOODIE. I think that while the raising of the Pithers Point bridge would not be a very easy task it could be done. The foundation is much cleaner. It is a simple foundation to tackle. I think that bridge could be raised, although it could not be raised under traffic.

Mr. WILKIE. You mean that the bridge could not be raised or lowered?

Mr. MOODIE. There has been a suggestion that it might be raised and the traffic diverted across the bridge at Fort Frances, but that is not very satisfactory. Our passenger engines could not negotiate those curves and constantly we would have to maintain railway traffic over the bridge. It would be expensive.

Mr. MAGRATH. Where is Pithers Point?

Mr. MOODIE. Pithers Point it at the north of Rainy lake where the lake outflows into Rainy river.

Mr. WILKIE. It is on the Duluth, Winnipeg & Pacific Railway?

Mr. MOODIE. Yes.

Mr. POWELL. I suppose there is a good deal of traffic by water underneath there?

Mr. MOODIE. We maintain that bridge always open and close it only when traffic is coming. The immigration people request us to do that. It is an international bridge.

Mr. WILKIE. Now take mile 206.

Mr. MOODIE. Just east of mile 206 on the profile there is a small portion that shows it would require to be raised; that is of very little account.

Mr. WILKIE. Then, going on still eastward?

Mr. MOODIE. East of mile 204 there is a small portion at mile 205 which would not present any difficulty in raising.

Mr. WILKIE. Would it need to be raised?

Mr. MOODIE. Yes. I am mentioning only the low places that would require to be raised commensurate with this proposed raise of three feet. East of 204 there is a pile trestle bridge 796 feet long.

Mr. WILKIE. What depth have you there?

Mr. MOODIE. We have piling going down. The deepest pile, I think, that I have any record of, is about 107 feet on that bridge. It is a very swampy bottom.

Mr. POWELL. What kind of piles?

Mr. MOODIE. Wooden piles. Those deep piles are spliced. The last piles we drove on that were 65-foot heavy cedar. Spliced piling has its disadvantages and we have driven literally solid piling. The soundings we have taken indicate an average depth of something in excess of 90 feet and not a firm bottom even then. So it is skin friction that is holding the piling.

Mr. WILKIE. What do you say about raising the track at that point?

Mr. MOODIE. The present base of rail at the Ottertail bridge has 502.9, and if the water were raised in Rainy lake to 500, and if that 500 level prevailed here, that would mean only 2.9 below the present base of rail. The bridge would require to be raised and the approaches on both sides of it would require to be raised.

Mr. WILKIE. And in order to raise it what would it be necessary to do?

Mr. MOODIE. The Ottertail bridge if raised would have to be re-driven throughout. I say that for the reason that much of that piling is spliced piling and the last repairs and renewals we put on that bridge this last summer were 65 and 70 foot piling. It would not be good practice to superimpose a structure of three feet on top of that bridge, more especially as the demands of heavy power are such that we cannot do with some of those bridges now what we could do with that same type of bridge when power was a little more than half its present weight. This bridge is not completely reinforced yet but it is being reinforced at the present time by the Santa Fe power.

Mr. WILKIE. As a matter of fact, what is being done there now?

Mr. MOODIE. Last week we finished the piling that we intended to do this fall and after the heavy traffic goes in December we will return to that bridge and complete the driving of that piling. You must understand that there is considerable interruption to traffic in doing pile driving in a bridge of that kind. In order to do that work at this season we have to build a special spur close to the bridge so that the trains can slip into the spur.

Mr. POWELL. How do you cap your piles?

Mr. MOODIE. It is a timber bridge throughout; B. C. timber throughout.

Mr. WILKIE. What do you find east of the Ottertail bridge?

Mr. MOODIE. Both east and west of the Ottertail there is a fill. That would have to be raised to whatever level we decide upon.

Mr. WILKIE. Were you here during the spring of 1916?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. Do you know to what depth the water rose then?

Mr. MOODIE. The water went up to 500.9, as I recall, in June, 1916.

Mr. WILKIE. I show you a photograph and ask you if you recognize that photograph.

Mr. MOODIE. Yes; this photograph was taken at the time the bridge was inundated.

Mr. WILKIE. In 1916?

Mr. MOODIE. Yes; it was in June. It is marked here in May 1916. It was actually in June. I think it was the 2nd of June, 1916.

Mr. WILKIE. That photograph shows it practically under water.

Mr. MOODIE. Yes; that is immediately west of the Ottertail bridge, some 50 or 65 feet west. I was present when that photograph was taken.

Mr. CLARK. That would indicate that it might be good policy to raise your bridge whether this new work is put in or not.

Mr. MOODIE. Our bridge was raised within a few days of the taking of that photograph at the railway's expense.

Mr. WILKIE. Was there any damage done to you by the high water of 1916?

Mr. MOODIE. Our traffic was suspended for some ten days. I think I am right in saying ten days. It was between nine and eleven days.

Mr. WILKIE. What was the result of the flood in 1916? What did the flood do to your road?

Mr. MOODIE. The flood washed considerable gravel out of the embankments where they were low and we had to restore those embankments and bring them above the height of the water as it then was. At the Ottertail bridge we raised the bridge temporarily 26 inches by placing timber crossways and lengthways on it. During the time of the high water that bridge was in danger of flooding and we loaded it down with eleven tons of rail from end to end to keep it from floating. The photograph will show that the water was actually over the rail of the bridge. I saw an Indian canoe taken across the top of the bridge. The water would be over your boot tops. We had to raise our bridge by the quickest method we knew and we did that by placing stringers longitudinally. We took all those rails out and laid timber from end to end of the bridge and we put on caps and ran other timbers longitudinally, relaid the tracks, raised the bench east and west of the bridge, and resumed traffic.

Mr. WILKIE. Do you know what that cost?

Mr. MOODIE. No, sir; I do not. It was a very large sum of money.

Mr. WILKIE. And you say that that Ottertail bridge and its approaches must be raised.

Mr. MOODIE. They must be raised if this water is going to be permanently higher. There is no doubt of that.

Mr. WILKIE. Then, going on eastward do we come to any other places?

Mr. MOODIE. I think that finishes the effect of Rainy lake on the Canadian National Railways.

Mr. CLARK. If you have finished that I want to ask a question. From west to east along your line, what would be the distance that would be more or less affected by this proposed raise?

Mr. MOODIE. It is affected from old mileage 203 to 227, a distance of 24 miles, but, Mr. Chairman, not all of that distance but only in spots.

Mr. CLARK. Now and then on your track for 24 miles the effect would be permanent?

Mr. MOODIE. Yes.

Mr. WILKIE. Mr. Moodie, have you reached a conclusion, generally speaking, as to the height to which your level should be increased? In other words, what distance should it be raised in order to give you the same margin of safety as you now have?

Mr. MOODIE. I would ask for a subgrade of 505 if this three foot raise is going to become effective.

Mr. WILKIE. And generally speaking that would mean in these lower places a raise of how much above your original grade line: I quite understand that it is not absolutely accurate all along, but, generally speaking, what is the raise?

Mr. MOODIE. Do you mean as per original construction?

Mr. WILKIE. Yes; exactly.

Mr. MOODIE. It would be practically five feet at Ottertail over the original construction.

Mr. WILKIE. Yes; but Ottertail is an exception. Except at Ottertail what would it be above the original construction?

Mr. MOODIE. It would be about three feet.

Mr. WILKIE. How much would it be above the existing construction at Ottertail?

Mr. MOODIE. Three and a half feet.

Mr. CLARK. How much is your existing construction now above the level of the water?

Mr. MOODIE. Above 497? Or what was it Sunday, we will say?

Mr. CLARK. Above the authorized level now.

Mr. MOODIE. About 497. It is about 5.9 from 497 to the base of rail. That is practically six feet from the 497 elevation to the base of rail.

Mr. CLARK. How much at that point would the proposed level raise the water?

Mr. MOODIE. It would raise it three feet, Mr. Chairman.

Mr. CLARK. And you would propose to raise your construction the same amount?

Mr. MOODIE. Yes; about three feet. It is not a very important matter whether it is three or four feet. The banks are low. We might even be content to do a little better than that and only charge the applicant company what the three feet would amount to.

Mr. CLARK. Of course, the impression I had was that one foot or two feet or three feet might make a good deal of difference in view of the fact that you would have to drive your piles.

Mr. MOODIE. Whether you build that bridge five or seven feet above water does not matter. There are only low banks on the Ottetail.

Mr. WILKIE. Then, generally speaking, you ask for a raise in all these fills of three feet above the original construction?

Mr. MOODIE. Yes. That is probably not the best way to put it. We will bring the subgrade up to 505. That is a correct answer. We would ask for that. If it is below 505 then we would bring it up to that. If it is over 505 we would not touch it.

Mr. WILKIE. I understand that in places on that rock fill there has been a subsidence.

Mr. MOODIE. There is a subsidence that has taken place on the big fill, as we call it.

Mr. WILKIE. Are you going to ask for, or had you included in your estimates, anything for bringing that subsidence up to the original construction?

Mr. MOODIE. No; that is our own affair.

Mr. WILKIE. We are not asking anybody to pay for that?

Mr. MOODIE. No.

Mr. POWELL. By sub-grade, you mean the base of the rail?

Mr. MOODIE. No. the sub-grade is the elevation up to which the contractor brings the track before the track is laid and ballasted.

Mr. POWELL. With sleepers in between.

Mr. MOODIE. And a foot of ballast below the ties.

Mr. WILKIE. Before we leave that, where you have to raise the level of the rails of an existing track and raise them during traffic, how do you manage?

Mr. MOODIE. We excavate our gravel in ballast pits. We bring it to the ground in open cars, hod cars we call them. It is unloaded by plows and it is put under the rails by hand labor. The operation of what is commonly known as lifting track is jacking the track up and allowing the ballast to go under and shoving it under and tamping it up hard, and it is raised.

Mr. WILKIE. Supposing you have to raise a track two or three feet, can you do that at a single operation?

Mr. MOODIE. No.

Mr. WILKIE. How much can you raise it at a single operation?

Mr. MOODIE. It depends on how much material you have available. If it is on level track you can raise it from a ballast car about eight or nine inches. The next train you would bring on would raise it up

four or five inches because the slopes would take care of it. As a general rule, in lifting track, you lift about four inches at a time.

Mr. WILKIE. Then you tamp it down and repeat the operation?

Mr. MOODIE. Yes, until you are up to your grade stakes.

Mr. WILKIE. What sort of material would it be necessary to use?

Mr. MOODIE. For raising the banks?

Mr. WILKIE. Yes.

Mr. MOODIE. It would all have to be ballast material. There is no other material you can lift track with and maintain traffic with safety. You cannot use clay for instance. You cannot plow clay off your hod cars. The plow will not go through clay. We do not want clay under our rails anyway. You would have trouble with it if you did have it.

Mr. POWELL. In frost?

Mr. MOODIE. And in wet weather also.

Mr. CLARK. Have you ballast material close by or would you have to bring it some distance?

Mr. MOODIE. We would have to bring it from a point about forty miles south of Fort Frances, the Addington pit. We are very short of ballast pits on the Fort Frances subdivision. We have good ballast about forty miles south of Fort Frances on the D. W. & P. which we have used.

Mr. CLARK. Is that natural ballast or do you have to crush it?

Mr. MOODIE. No, it is natural ballast.

Mr. POWELL. Do you use any rock ballast?

Mr. MOODIE. No.

Mr. WILKIE. Have you had made any computations of the amount of labor required to do the work that would be made necessary by this elevation of the water level?

Mr. MOODIE. Yes, I have made it.

Mr. WILKIE. In what way have you made it?

Mr. MOODIE. I was instructed in this connection that probably a three-foot raise would be called for, and I knew that Mr. W. F. Tye had been called in by this Commission to estimate along the same lines some years ago, and he having done so, I took the liberty of using his quantities. On reading Mr. Tye's report, I know Mr. Tye assumed only a two and a half foot raise as being necessary. However, I took his quantities. If I recall aright, his estimate was made in 1916 and his unit prices were very low in comparison with unit prices of to-day. So I took Mr. Tye's quantities at present-day prices and prepared an estimate covering the same as he has covered to raise the track, as he stated, two and a half feet. That estimate amounts in total to \$582,349.

Mr. CLARK. What does that include? Does that include the raising which you have enumerated here, or what is it intended to cover?

Mr. MOODIE. A raise of two and a half feet.

Mr. CLARK. At what points?

Mr. MOODIE. At the low places we have referred to.

Mr. WILKIE. Mr. Tye's report gives the exact mileage and the quantity of material necessary for the elevation of two and a half feet.

Mr. CLARK. Had the question arisen in 1916 as to raising the water level?

Mr. WILKIE. Yes. I am going to take the report up. I have a copy of Mr. Tye's report. You have in your hand an approximate estimate of the cost of alterations necessary at bridges on Rainy lake and at Pithers Point using quantities as per W. F. Tye's report and with present-day, 1925, prices.

Mr. MOODIE. Yes.

Mr. WILKIE. I find on page 7 of the copy I have of Mr. Tye's report the cost of raising the grade to a minimum of 1000 CNR together with riprap necessary estimated as follows: On page 1 of your estimate you have the corresponding quantities to those which follow in Mr. Tye's report.

Mr. POWELL. Is yours the same list of items with increased prices?

Mr. MOODIE. Yes.

Mr. WILKIE. I find the first item in Mr. Tye's report in 237,300 cubic yards of gravel filling at 35 cents. What price do you use there? I see you have used \$1 a yard.

Mr. MOODIE. Yes.

Mr. WILKIE. Why?

Mr. MOODIE. That is our standard price for gravel filling.

Mr. CLARK. Is that the price you pay your contractor?

Mr. MOODIE. No, it is the price it costs us. We do all our own ballasting. It costs us between 95 cents and \$1.05, or an average price of \$1.

Mr. WILKIE. The next item is 28,050 cubic yards of riprap at \$1.50. You have charged it at \$2.

Mr. MOODIE. The price of \$2 is a price I have demonstrated to my satisfaction, having done work of the same kind in the last six months with such riprap as contemplated in the plan.

Mr. WILKIE. The next item is 54,000 F. B. M. bridge timber at \$54. I understand that price is for the timber in position in the finished structure.

Mr. MOODIE. That is what it is intended to be.

Mr. WILKIE. What price do you charge?

Mr. MOODIE. I have charged \$70 a thousand as being the price of bridge timber in situ.

Mr. WILKIE. What do you say as to the \$70?

Mr. MOODIE. That is a fair price. It is not as much as we pay for repair work. It is what we pay for an entire renewal under traffic.

Mr. WILKIE. That is the price you pay for it?

Mr. MOODIE. Yes. What all labor amounts to per 1,000 F. B. M. in the bridge.

Mr. WILKIE. The next item in Mr. Tye's report is 2,300 pounds of bridge iron at 9 cents. I see you charge that at 7 cents.

Mr. MOODIE. That is our going price.

Mr. WILKIE. The next is 7.2 miles of ballasting at \$1,600, Mr. Tye puts it. What do you charge?

Mr. MOODIE. \$2,500.

Mr. WILKIE. Why the increase?

Mr. MOODIE. That is more or less of a recapitulation of the previous price of \$1 a yard. It runs from 2,600 to 2,700 yards to the mile and the 2,500 is a little less, but the cost of filling this would be about \$2,500 a mile.

Mr. WILKIE. Then Mr. Tye has \$1,000 for extending culverts and you have adopted the same figure.

Mr. MOODIE. Yes, that is a very small item.

Mr. WILKIE. You have totaled yours up and added engineering, superintendence and contingencies at 15 per cent, whereas Mr. Tye fixes that at ten per cent. You have an increase of five per cent.

Mr. MOODIE. We cannot do engineering, superintendence and contingencies for ten per cent. We have not done it for years for that.

Mr. WILKIE. Mr. Tye's figures were those of 1916. Has the cost of engineering, superintendence and contingencies increased?

Mr. MOODIE. Yes, to a marked extent and other charges are taken into account now that were not in force then. I refer to rental of equipment and rental for use of cars on the work which tend to swell estimates. We find our estimates are on the increase in connection with these extra charges.

Mr. WILKIE. What do you think of the fairness and propriety of 15 per cent for engineering, superintendence and contingencies?

Mr. MOODIE. I think it is a very reasonable percentage to add. In many estimates we make there is 20 per cent added. Certainly the other work may be smaller to justify using 20 per cent for this work.

Mr. WILKIE. Following down Mr. Tye's report, on page 9 of my copy and dealing with Bear's Pass bridge, I find the first item in his report is 20,000 cubic yards of filling at 35 cents. You have used the same quantity with the greater price of \$1.

Mr. MOODIE. That is the same filling as before. Mr. Tye may have shown 35 cents for filling. It may be that you can do filling for that, but you cannot fill tracks and raise tracks with anything short of ballast material and go through all the work of ballasting. You can only ballast with ballast. You have to haul the ballast for forty or fifty miles to the point, raise the track and tamp it in. That accounts for the increase in the cost.

Mr. WILKIE. The next item on Mr. Tye's report is 1,850 cubic yards of riprap at \$1.50.

Mr. MOODIE. That rate is raised to \$2 just as in the first estimate.

Sir WILLIAM HEARST. I suppose the same principles prevail all through?

Mr. WILKIE. I have gone through them all except lifting bridge. Then I see in Mr. Tye's report a figure for lifting bridges, \$15,000. On turning to your estimate I find \$30,000. What do you say as to those two figures?

Mr. MOODIE. Mr. Tye's prices were 1916 prices, and our operations to-day are costing us as regards work of this character very much more than the 1916 rates. I increased his price from \$15,000 to \$30,000 because I read in Mr. Tye's report considerable doubt as to the possibility of doing the work. I had considerable doubt in my mind as to the possibility of doing the work, and I still doubt it although I put that figure down. It was the best I could do. I do not know how the work can be done. I do not know whom I can get to do it. So I thought if Mr. Tye put in \$15,000 for doing this difficult work in 1916, it is reasonable to put in \$30,000 to-day to estimate on the same project with all its difficulties.

Mr. WILKIE. The next item we come to in Mr. Tye's report is on page 12 of my copy—cost of raising fills across Rainy lake. Dry wall, \$4—no change. Slope walls \$2. In your estimate you have made no change. Rock fill, in Mr. Tye's report 14,600 cubic yards at \$1.35. Turning to your estimate I find it is charged at \$2. Why the increase?

Mr. MOODIE. That is riprap.

Mr. WILKIE. Rock ballast is double, so I need not trouble you with that. Lifting bridge—we come to \$15,000 in Mr. Tye's estimate and \$30,000 in yours. Will the same remarks apply?

Mr. MOODIE. Yes.

Mr. WILKIE. Engineering, superintendence and contingencies, 15 per cent—the same remarks would cover that. I see the grand total in Mr. Tye's report is \$270,888 and your grand total is just about double, \$582,349.

Mr. MOODIE. Yes, that is correct.

Mr. WILKIE. In your estimate on the next page you have a supplementary estimate of the cost of work which would be necessary to

add to Mr. Tye's figures due to reconstruction of Ottetail bridge (pile trestle) to base of rail 506.4. Did Mr. Tye deal with that?

Mr. MOODIE. Mr. Tye in the first estimate of his report put in an item for 54,000 F. B. M. of bridge timber, I think at \$40 per thousand. The same item was repeated in the statements which you have just read at an increased price of \$70 per thousand, but that item cannot cover the reconstruction of the Ottetail bridge. Approximately there are only two cars of timber in that and you can not rebuild that bridge with two car loads. I made an estimate of what it would cost to rebuild the Ottetail bridge if the track is to be raised three feet. I estimated 30,000 lineal feet of piling at 90 cents per lineal foot, or \$27,000; 180,000 F. B. M. timber at \$70 per thousand or \$12,600 and 18,000 pounds of iron at 7 cents per pound, or \$1,260, making a total of \$40,860. As Mr. Tye's estimate had an allowance of some \$3,780 for the 54,000 F. B. M. bridge timber that he had inserted, I made a deduction of that amount, making a net addition of \$37,080, to which had to be added 15 per cent for engineering, superintendence and contingencies, making a total of \$42,642 representing the supplementary amount necessary to handle the Ottetail bridge.

Mr. WILKIE. So that you have added to Mr. Tye's total figures the cost of building the Ottetail bridge new and complete.

Mr. MOODIE. Of building the Ottetail bridge to the new grade.

Mr. WILKIE. You told us because the old bridge——

Mr. MOODIE. Can not be added to.

Mr. WILKIE. Then follows the next item in your account, extra expense to which railways are put account necessity of raising future second track three feet?

Mr. MOODIE. That item is a very considerable item in amount and is brought into this statement on account of the fact that under the proposed scheme we are obliged to raise our tracks some three feet. We will also be required to raise our future second track at a time which is not far distant those three feet which we otherwise would not have been required to raise.

Mr. POWELL. That is anticipated damage?

Mr. MOODIE. Yes, but it is very present in view of the fact that we will have this double track in a very few years.

Mr. CLARK. Supposing your business would increase so that you would have to have four tracks, would you figure on the possibility of raising your four tracks?

Mr. MOODIE. The Railway Commission has something to say as to that.

Mr. CLARK. That is what I am trying to get at.

Mr. MOODIE. If you have a track and another railway wishes to come along and wishes to cross it, as I understand it, you can claim

two diamond crossings, not more, so that there is a limit how far you can go, but it goes the length of two tracks.

Mr. CLARK. The question I had in mind is this, whether or not you could count on what future extensions you might think your business required in making up your accounts as to this particular raise.

Mr. WILKIE. It is now or never with us. We must, if seems to me, present to this Commission exactly what our position is. It is this. We have a good road there, crammed now, and we can not get any more through it. In the ordinary course of business we have to get more facilities to handle more traffic. That can be done only by doubling the track. Witnesses have sworn we will have to do this. If we do it and the cost of it is added to by this development, should not the cost of it be charged to this development?

Mr. CLARK. That might be a matter of consideration. I am not arguing the thing.

Mr. WILKIE. No. I want to get the thing presented.

(The complete statement filed by Mr. Moodie is as follows:)

CANADIAN NATIONAL RAILWAYS

Approximate estimate of cost alterations necessary at bridges on Rainy lake and at Pithers Point using quantities as per W. F. Tye's report and with present-day (1925) prices.

Cost of raising grade to a minimum of 1,000 CNR together with riprap including Ottetail bridge

237,300 cubic yards gravel filling @ \$1-----	\$237, 300
28,050 cubic yards riprap @ \$2-----	56, 100
54,000 F. B. M. bridge timber @ \$70-----	3, 780
2,300 pounds bridge iron @ .07-----	161
7.2 miles ballasting @ \$2,500-----	18, 000
Extending culverts-----	1, 000
	<hr/>
	\$316, 341
Engineering, superintendence and contingencies, 15%-----	47, 451
	<hr/>
	\$363, 792

Cost of raising Bear's Pass Bridge

20,000 cu. yds. filling @ \$1-----	\$20, 000
1,850 cu. yds. riprap @ \$2-----	3, 700
0.8 miles ballasting @ \$2,500-----	2, 000
Lifting bridge-----	30, 000
	<hr/>
	\$55, 700
Engineering, superintendence, contingencies, 15%-----	8, 355
	<hr/>
	\$64, 055

Pithers Point Bridge

12,000 cu. yds. filling @ \$1-----	\$12, 000
1,200 cu. yds. riprap @ \$2-----	2, 400
0.8 miles ballasting @ \$2,500-----	2, 000
Lifting bridge-----	30, 000
	<u>\$46, 400</u>
Engineering, superintendence, & contingencies, 15%-----	6, 960
	<u>\$53, 360</u>

Cost of raising fills across Rainy Lake

Dry wall, 1,410 cu. yds. @ \$4-----	\$5, 640
Slope wall, 1,555 cu. yds. @ \$2-----	3, 110
Rock fill, 14,600 cu. yds. @ \$2-----	29, 200
Rock ballast 2 miles dbl. track @ \$10,000-----	20, 000
Lifting bridge-----	30, 000
	<u>\$87, 950</u>
Engineering, superintendence & contingencies, 15%-----	13, 192
	<u>\$101, 142</u>

Abstract

Total cost of all the foregoing would be :

Raising grade to 1,000 and riprapping-----	\$363, 792
Raising grade and Bear's Pass Bridge-----	64, 055
Raising grade and Pithers Point Bridge-----	53, 360
Raising grade and fill and bridge across Rainy lake-----	101, 142
Total-----	<u>\$582, 349</u>

CANADIAN NATIONAL RAILWAYS

Supplementary estimate of cost of work which would be necessary to add to W. F. Tye's figures due to reconstruction of Ottetail Bridge (pile trestle) to base of rail 506.4.

Cost of Ottetail Bridge

30,000 lin. feet piling @ .90 per lin. ft-----	\$27, 000
180,000 F. B. M. timber @ \$70.00 per M-----	12, 600
18,000 lbs. iron @ .07 per lb-----	1, 260
	<u>\$40, 860</u>
Deduction due to allowance in Mr. Tye's estimate-----	3, 780
	<u>\$37, 080</u>
Add 15% engineering, superintendence & contingencies-----	5, 562
	<u>\$42, 642</u>
Extra expense to which railways are put account necessity of raising future second track 3 feet-----	\$64, 935
Add 15% engineering, superintendence & contingencies-----	9, 739
	<u>\$74, 674</u>
Add abstract total-----	582, 349
Grand total-----	<u>699, 665</u>

NOTE.—(a) The excess of \$125,825 between above estimate and Railways' estimate is due to the fact that Mr. Tye estimated upon a raise of 2½ feet, while railways' estimate was based upon a 3 foot raise.

(b) Workman's compensation assessments are not included in these estimates.

(Thereupon, at 6.15 p. m., the Commission adjourned until 9.30 a. m. Wednesday, September 30, 1925.)

WEDNESDAY, SEPTEMBER 30, 1925.

The Commission reconvened at 9:30 o'clock a. m., Mr. Clark presiding.

Mr. CLARK. Gentlemen, before we begin this morning I want to say on behalf of the Commission that we are fully impressed with the importance of the reference that has been made to the Commission and with the importance to the various interests of the subject matter of our inquiries. I have had several inquiries as to when we would probably conclude the matter and be able to report to our two governments. That, I need not assure you gentlemen who have entered into the merits of the matter, will not be for some time yet.

The engineers of the two governments, I am informed, will need one full season, and perhaps more, before they are able to make a final report as to their share of this investigation. You may be assured, however, that when that report is made it will be full and complete and lacking in no particular or detail. It will cover the entire scope of country which is involved in or influenced by this inquiry.

The Commission this morning finds itself faced with a situation that is crowding it a little. Under the treaty under which the Commission is operating there are certain meetings which are definitely fixed and which cannot be postponed. Therefore, when I say to you this morning that we hope those who are interested will be as concise as they consistently can in presenting their entire views to the Commission, I trust you will consider the time of the Commission as well as your own and assist the Commission in hastening the time of departure.

Mr. Wilkie, you may proceed now.

(Walter T. Moodie, who was testifying at the time of the adjournment, resumed the stand and testified further as follows:)

Mr. WILKIE. Mr. Moodie, the last thing prior to the adjournment we were dealing with your figures and those of Mr. Tye, and I think we had gotten so far as dealing with the cost of the Ottetail bridge and the application of your prices to Mr. Tye's quantities, showing a total for that item of \$42,642. Will you look at your estimate there and tell me what would be the extra expense to which the railway would be put in making the raise if you had double tracks; that is, in raising the amount to compensate for the increased elevation of the water.

Mr. MOODIE. On account of the necessity of raising the future second track to a level of three feet more than otherwise would have been done an estimate would be made to cover that cost which I have shown as an addition to the figures in Mr. Tye's estimate. That figure amounts to \$64,935. It is shown here as extra expense to which the railways are put on account of necessity of raising the future second track three feet. That with the 15 per cent engineering contingency would amount to \$74,674.

Mr. WILKIE. Now will you be good enough to explain to the Commission just how that increase is made up?

Mr. MOODIE. I trust I have made it clear that if the water level were established at the stage of 500 and held at that elevation for frequent periods the railways would be required to protect themselves against that higher stage. As has been indicated before, the imminence of double-tracking is very present. It is to be expected within the next three or four years at most that this work will be proceeded with. In such case the double track will have to be raised. The future second track will have to be raised to the same elevation as the main track, and I see no alternative but to include an item there to cover it.

Mr. WILKIE. I think one of the commissioners asked yesterday just how this increased quantity came about in the double-tracking. It was to that that I was directing my question.

Mr. MOODIE. The track would have to be permanently raised to that high elevation; that is, the future second track.

Mr. WILKIE. Taking a cross section of the double track road just where would this extra quantity come in?

Mr. MOODIE. At those parts that were affected under the raise of three feet as affecting the single track.

Mr. POWELL. Which would require a wider base and a heavier cross section.

Mr. MOODIE. Yes.

Mr. POWELL. I have not exactly got the point of the \$64,000. Am I right in this: You estimate that to be the difference between the cost of raising the second track to the required height the additional feet over what it would be if it stopped at a level three feet lower?

Mr. MOODIE. That is it exactly.

Mr. POWELL. Covering the whole difference or only a portion of the 24 miles?

Mr. MOODIE. Those portions of it that would be affected by a raise of water.

Mr. POWELL. That applies to the total increase throughout the whole 24 miles?

Mr. MOODIE. Yes, sir; those portions of it that are affected.

Sir WILLIAM HEARST. It is the additional cost that would be required to double track to an elevation three feet higher than you would have to grade but for the proposed increase in the elevation of the water?

Mr. MOODIE. Yes, still at those points affected by such raise.

Sir WILLIAM HEARST. But you do not have to raise it except at those points?

Mr. MOODIE. No; those are the points we are considering throughout.

Mr. WILKIE. Then, you make the total of that extra expense \$74,674?

Mr. MOODIE. That includes the contingencies, yes, sir.

Mr. WILKIE. And adding your supplemental estimates to those of Mr. Tye, and having raised Mr. Tye's quantities total by applying present day prices to his quantities, you get a grand total of \$699,665.

Mr. MOODIE. That is the approximate figure that we estimate.

Mr. WILKIE. Mr. Moodie, what do you say as to the actual performance of that work at this place for that amount of money; that is, as to whether the \$700,000, approximately, is or is not a fair price for that work?

Mr. MOODIE. I have endeavored to place fair unit prices against each item and I know them to be existing prices as of the present time. We do considerable work that proves that, too. That is why fair unit prices have been used.

With respect to the quantities, the quantities up to the supplemental estimate are Mr. Tye's quantities. I have taken them and I have every reason to believe that Mr. Tye computed them carefully, that they are reasonable, and that they compare very closely with other quantities which we have taken which form the basis of another estimate called the railway estimate.

Sir WILLIAM HEARST. The \$699,665 is the damage computed by the witness on Mr. Tye's quantities but including the cost of double-tracking? Am I right?

Mr. WILKIE. Yes; with but one condition; and that is at the prices that the railway now pays.

Sir WILLIAM HEARST. Yes.

Mr. WILKIE. Mr. Moodie, you have made no change in Mr. Tye's quantities?

Mr. MOODIE. None whatever.

Mr. WILKIE. How did you arrive at the prices that you have taken?

Mr. MOODIE. These are prices that we are at present incurring in doing similar work. They are present day prices for this class of work.

Mr. WILKIE. I will then ask you as to the total. How do you think that will work out if you come to actually doing the work?

Mr. MOODIE. It is only an estimate, it is true, and it has all the inherent defects of all estimates. It may or may not be exceeded.

Sir WILLIAM HEARST. It is not a trading figure?

Mr. MOODIE. It is the best estimate that we can make under the circumstances, Sir William.

Mr. WILKIE. Mr. Moodie, did you have an estimate made of your own, that is, of the railway company's?

Mr. MOODIE. There is another estimate made up by the railway. Mr. Tye's report shows that he recommended a raise of $2\frac{1}{2}$ feet above high water level and we never agreed with Mr. Tye in his $2\frac{1}{2}$ feet margin of safety; we took a margin of 3 feet in that estimate that we compiled last year. Naturally, the additional six inches over that long stretch means some substantial increase over Mr. Tye's in regard to quantities.

Mr. WILKIE. I see from the note at the end of your memorandum here the excess of \$125,825 between that estimate and the railways' estimate is due to the fact that Mr. Tye estimated upon a raise of $2\frac{1}{2}$ feet while the railways' estimate was based on a raise of 3 feet. Apparently the railways' estimate was somewhere in the neighborhood of \$120,000 in excess of Mr. Tye's?

Mr. MOODIE. That is so, yes.

Mr. WILKIE. But the railways' estimate meant for a raise of 3 feet while Mr. Tye's was for a raise of $2\frac{1}{2}$ feet.

Mr. MOODIE. Exactly.

Mr. WILKIE. Would the increase of six inches account for the whole or is it a part of the whole \$125,000?

Mr. MOODIE. I think it shows a fairly good agreement between the two classes of figures, more especially as the unit prices used by the railways' estimate were the same as those to which Mr. Tye's estimate has been raised.

Mr. CLARK. Do you use the same quantity figures for Mr. Tye's $2\frac{1}{2}$ feet as you use for your 3 feet?

Mr. MOODIE. They were not the same quantity figures. The quantity figures were increased on account of the additional six inches.

Mr. CLARK. Mr. Tye's estimate was based on a raise of $2\frac{1}{2}$ feet?

Mr. MOODIE. Yes, sir.

Mr. CLARK. And yours is based on a raise of 3 feet?

Mr. MOODIE. Yes, sir.

Mr. MAGRATH. That is the company's?

Mr. MOODIE. The company's, yes, sir.

Mr. WILKIE. These quantity figures that you have in your hands are absolutely Mr. Tye's?

Mr. CLARK. I understand that perfectly, but he says Mr. Tye figured on $2\frac{1}{2}$ feet in estimating the damage that will be caused to the railway company in raising the water three feet.

Mr. MOODIE. I trust I have not misled you, Mr. Chairman, Mr. Tye's estimate throughout assumed a raise of these embankments of $2\frac{1}{2}$ feet. He gave certain quantities and rates for those units. We adhered to his quantities but we placed present day rates against them. That brings us up to the figure of \$582,349. I also submit two additional items, one covering the cost of a new Ottertail bridge at present day prices and one showing the extra expense to which the railways are put on account of raising the future second tracks three feet. These two items together make \$117,316. That, naturally, in our opinion, would require to be added to Mr. Tye's figures, making a total of \$699,665. That is what you might call a present day Tye estimate, always remembering that it is a raise of $2\frac{1}{2}$ feet.

Mr. CLARK. Yes; but what I am trying to get at is that you are contemplating a raise of three feet.

Mr. MOODIE. Yes, sir.

Mr. CLARK. You are attempting to show the Commission what that will cost you?

Mr. MOODIE. We have just entered upon that point. The railways did make an estimate quite apart from Mr. Tye's.

Mr. CLARK. I understand, but is this the estimate that you desire the Commission to take into consideration in estimating the damage which may be caused by the raising of this water level? If it is not what is the purpose of having it put in here?

Sir WILLIAM HEARST. As I understand you, Mr. Moodie, your total claim is \$825,490?

Mr. WILKIE. Exactly, yes, sir.

Sir WILLIAM HEARST. With \$125,000 added to the Tye estimate. I think one thing the chairman wanted to get and that I wanted to get is how did you arrive at the quantities for that extra half foot. Did you yourself measure the quantities, or did you simply add two-fifths to Mr. Tye's quantities?

Mr. WILKIE. If you will pardon me I will bring that out. I was proceeding to do that very thing.

Mr. CLARK. I think you can clear it up in just a word. Mr. Tye's estimate was based on a certain quantity required to raise $2\frac{1}{2}$ feet.

Mr. WILKIE. Yes.

Mr. CLARK. Mr. Moodie takes the same quantities for a raise of 3 feet?

Mr. WILKIE. No, sir; not at all.

Mr. CLARK. Well, is this a 3 foot raise or a $2\frac{1}{2}$ foot raise?

Mr. WILKIE. That is $2\frac{1}{2}$ feet.

Mr. CLARK. Well, are you coming to an additional amount for a raise of three feet?

Mr. WILKIE. Yes, sir; that is what I am coming to.

Mr. CLARK. I understood Mr. Moodie to say that this additional expense was for the contemplated double tracks.

Mr. WILKIE. Quite correct.

Sir WILLIAM HEARST. No, Mr. Wilkie, this is an item for the double track.

Mr. McCUMBER. Is that Tye estimate on the double track basis?

Mr. MOODIE. It has been brought up to that basis. It was not so originally.

Mr. WILKIE. Mr. Moodie, how were the company's estimates prepared? How were the quantities ascertained?

Mr. MOODIE. I did not prepare the company's estimates myself, but I speak with full confidence when I say I know how it would be prepared, namely, from cross-sections up to the subgrade of 5.05. That contemplated a raise of three feet to our track.

Mr. WILKIE. Was it done by men doing field work right on the job?

Mr. MOODIE. It was done by our engineers who did field work and made computations.

Mr. WILKIE. And in that way there was obtained an entirely independent investigation from Mr. Tye's?

Mr. MOODIE. Quite apart.

Mr. WILKIE. May I go a little further? There are certain peculiarities of construction which Mr. Tye mentioned. Were those adopted by your company? I am referring now particularly to such things as the dry stone wall.

Mr. MOODIE. No; they were not taken into account. These methods were not adopted in the railway's estimate.

Mr. WILKIE. You adopted your own methods?

Mr. MOODIE. We adopted our own methods for doing the work as we believed the work would require to be done should the occasion arise to do it.

Sir WILLIAM HEARST. Having regard to the extra six inches, Mr. Moodie, did you pretty well arrive at the same place that Mr. Tye arrived?

Mr. MOODIE. Mr. Wilkie will bring that out. We believe we have reached a fairly close agreement.

Mr. WILKIE. Your method of making your own measurements, on the ground, computing your own quantities of material, applying that material according to your own ideas as to how best to do it, brings you to within \$125,000 of Mr. Tye's price?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. That \$125,000 covers the 3 foot rise in your case as against the 2½ foot rise in the case of Mr. Tye's estimate?

Mr. MOODIE. Yes.

Mr. WILKIE. What do you say as to the result as to whether your figures and Mr. Tye's correspond in substance?

Mr. MOODIE. I think they show a fairly close agreement between the two estimates, considering they set out to be slightly different things.

Mr. WILKIE. I want to proceed with the matter of Mr. Tye's report, because there are some other things in it to which I want to direct your attention.

Mr. CLARK. I do not think it is necessary to submit Mr. Tye's report. Just make what remarks you care to make regarding it, Mr. Wilkie. We already have Mr. Tye's report in our files.

Mr. WILKIE. That is what I had thought. This report to which I am referring is dated October 30, 1916. Mr. Moodie, I first direct your attention to the proposed regulation:

In my discussion with Mr. Meyer I found that I had not previously correctly understood what was proposed to be done; that it was not proposed, as I understood, to give the Minnesota & Ontario Power Company authority to raise its dam from a level of 497 P. W. D., Canadian datum, where it now is to an elevation of 500, but that the International Joint Commission would take charge of the regulation of the water levels and would raise the waters of Rainy lake to a high water elevation ranging from 499.5 to 500, the idea being to put the lake to this level whenever the excess waters over and above the amount required for power were sufficient so to raise it, and the dams would be installed at the outlets of other lakes here up on the watershed to aid in so regulating the waters.

What do you say as to those assumptions, the assumption that the control of the waters will be taken over by this Commission and the assumption that controlling dams will be built here up on the other lakes?

Mr. MOODIE. Do you wish me to give my opinion on that?

Mr. WILKIE. Do you as the operator of this section of the road make those assumptions?

Mr. MOODIE. In compiling these estimates?

Mr. WILKIE. No; but would you feel safe in making them? I think Mr. Tye has based his whole estimate upon those assumptions. I ask you as the man responsible for the safe operating of this road if you feel safe in making your assumptions in connection with provisions for the safety of your road?

Mr. MOODIE. There is no assurance here as to what level the water will be raised to in this lake by this proposition.

Sir WILLIAM HEARST. I assume that your estimate has been made on the assumption that the level will be raised three feet beyond this present level.

Mr. MOODIE. I might answer that from what has taken place previously in this hearing. It has been stated that the water would be raised to 500, the dam would be raised to the 500 elevation, and that probably the water in the lake might be 501, or something over 501. We have estimated our subgrade at 505 in the railways' computation.

Mr. WILKIE. I have not got over to anybody what I mean. Mr. Tye has assumed that certain dams would be built which were not described in his report. Do you feel safe in the assumption that all of those dams will be built and properly regulated?

Mr. MOODIE. No; I have no assurance that they will be regulated just as it might be intended to regulate them.

Mr. WILKIE. In the preceding part of the paragraph I have just read Mr. Tye assumes that the management of those dams and the control of the waters will be in the hands of this Commission.

Mr. MOODIE. That is what he states in his report here.

Mr. WILKIE. Then, I need not ask you to comment upon that.

Mr. POWELL. As I understand it, you proceeded and made your estimate which is given to the Commission on a certain assumption as to the increase of the level in Rainy lake? That is correct, is it not?

Mr. MOODIE. Yes, sir; assuming—

Mr. POWELL. All I want is yes or no. Into the wisdom of that assumption you never inquired?

Mr. MOODIE. No; it was not within my province, Mr. Powell.

Mr. POWELL. That is a matter for the hydro-electric engineers.

Mr. WILKIE. I am not going to trouble you, Mr. Moodie, about the high water as discussed by Mr. Tye. He says: "In every work designed by human hands it is necessary to have a factor of safety." You, of course, agree with that?

Mr. MOODIE. Yes.

Mr. CLARK. What is the purpose of this examination of this witness on Mr. Tye's report?

Mr. WILKIE. I just wanted to get certain portions of Mr. Tye's report with which I wanted him to deal.

Mr. CLARK. What is the purpose of these that you are interrogating the witness about just now? What is the purpose in putting that evidence before this Commission? Is it a question of the wisdom of Mr. Tye's report, or what is it? There is being consumed a vast amount of time in what I at least consider immaterial matter.

Mr. WILKIE. Unfortunately, I have not gotten to my points as rapidly as I had hoped, but I think if you will pardon me just a moment that can be done.

Mr. CLARK. Go ahead.

Mr. WILKIE. Have you got the paragraph I was looking at?

Mr. MOODIE. Yes, sir.

Mr. WILKIE. "In every work designed by human hands it is necessary to have a factor of safety." You, of course, agree with that?

Mr. MOODIE. Yes; I agree with that.

Mr. WILKIE. Then further down he says: "The proper time at which to open sluices to regulate the flow is dependent on fallible human judgement. Meteorological conditions can not be predicted more than a day in advance and not that far with any degree of certainty, so that the regulation of the sluices in order that an elevation of 500 may not be exceeded is very difficult, showing the almost vital importance of the Canadians believing a large factor of safety is necessary."

Mr. MOODIE. That is my view.

Mr. WILKIE. Then he says: "The proper regulation of the water of Rainy lake will also be dependent on dams on the upper waters and many dams have been known to break and they will always break at high water."

Mr. POWELL. Mr. Moodie has never given this matter any consideration, Mr. Wilkie. He is not a hydraulic engineer.

Mr. WILKIE. I want to get from him his attitude as to the dangers.

Mr. POWELL. That would not have any effect on my mind. I do not know what effect it would have upon the minds of my brother Commissioners. This is a matter into which Mr. Moodie has never inquired.

Mr. WILKIE. I am afraid I have not gotten to the Commission what I am aiming at. It is this: In fixing the three foot limit as the point to which the railway levels should be raised you are at once brought face to face with the question of what is the margin of safety that is reasonably necessary.

Mr. CLARK. I think he has already testified as to that, has he not?

Mr. WILKIE. He has said what it was, but he has not told us why he reaches that conclusion, and I am bringing him to the point as to why he makes three feet instead of Mr. Tye's two and a half feet.

Mr. CLARK. If you think that is important, go ahead.

Sir WILLIAM HEARST. Can he not give us his reason if he has one?

Mr. CLARK. The examination of this witness has already taken a vast amount of time.

Mr. WILKIE. I am very sorry, Mr. Chairman. I was endeavoring to expedite matters.

Mr. CLARK. We would be glad if you can get down to the material matter and not go too much into details. Could you not ask Mr. Moodie upon what he bases his idea that three feet are necessary for safety?

Mr. WILKIE. If I may I will get at that in two moves instead of one. Mr. Moodie, you have used three feet as the elevation which you think would preserve the present measure of safety. Mr. Tye has used two and a half feet.

Mr. MOODIE. That is in the estimate of the raising.

Mr. WILKIE. The Commission would like you to state as briefly as you can why you choose three feet.

Mr. MOODIE. The water is to be raised three feet from 497 to 500 at the dam. That appears to me sufficient reason for using three feet, but I think, Mr. Wilkie, you will agree that it is four feet the railways have used above high water mark as a margin of safety.

Mr. POWELL. And you have worked it out on that hypothesis?

Mr. MOODIE. Yes; I have stated that it was an elevation of 505 for our subgrade or four feet above 501.

Mr. CLARK. Your conclusion is that if you are safe now at two and a half feet you will be safe if it is three feet by raising your tracks to correspond with the raising of the water level? Is that it?

Mr. MOODIE. We have estimated that the subgrade must be four feet above the water level for that track to be reasonably safe.

Mr. CLARK. It is four feet now, is it not?

Mr. MOODIE. It is three point five at its very lowest point.

Mr. CLARK. You consider that safe at the present time?

Mr. MOODIE. No; I do not consider it safe. There are many things we would like to do but we have not the money with which to do them.

Mr. CLARK. Yes; but you do not get my notion exactly. If you raise the water level three feet it is necessary for you to raise the level of your tracks three feet to maintain the present condition of safety?

Mr. MOODIE. Yes, sir.

Mr. CLARK. And that is what you have estimated on?

Mr. MOODIE. Yes, sir.

Sir WILLIAM HEARST. You have simply raised your grade the same as you expect the water to be raised?

Mr. MOODIE. Yes.

Mr. WILKIE. There is another matter in Mr. Tye's report to which I want to direct your attention and that is the matter of the way in which he had raised the rock fill. In dealing with the

fill across Rainy lake he says: "It is over 100 feet in height," and he continues by saying that it would not be safe to trifle with that fill by dumping stuff over the side and suggests leaving the fill at its width and then building stone walls up the side instead of dumping rock in the ordinary way. Will you tell the Commission what you have to say about that method of construction?

Mr. MOODIE. Frankly, gentlemen, the suggestions contained in Mr. Tye's report do not appeal to the Canadian National Railways in regard to his proposal for raising the fill. He proposes to erect on each side of the fill, on the top of the fill on each side, dry stone walls some three feet in height in order to raise it up to the future grade. Dry stone walls are not a very good method of raising the fill under those circumstances.

In my own opinion, the question of how that fill would be raised, if it were required to be raised, would be given most serious consideration by our engineers and those who have experience, and while we would not like to proceed and add to the fill by dumping additional rock in it for fear there might be a slide, we would not voluntarily start with the raising of the fill by those walls recommended by Mr. Tye because that is not an acceptable method.

Mr. WILKIE. Mr. Tye points out that the fill is a very heavy one, 100 feet high in places, resting upon a bottom of mud.

Mr. MOODIE. Rock.

Mr. WILKIE. Well, rock overlaid with mud; and that it would be dangerous to disturb it. What do you say as to that?

Mr. MOODIE. The fill at the time of Mr. Tye's report had been in existence for only some two or three years. It has been in existence now for ten years, and we have seen its behavior. In my opinion, I think the proper method to raise the fill would be the ordinary method, and I would press that should it come to be discussed by our engineers.

Mr. McCUMBER. That is, widening the base and filling it higher on a wider base.

Mr. MOODIE. Yes, sir; whatever we determine it should be raised.

Sir WILLIAM HEARST. Would that lessen the cost to the method proposed by Mr. Tye?

Mr. MOODIE. No; I think it is a heavier cost.

Mr. WILKIE. Then we leave the question of the cost of making the raise at that point. If this roadbed were raised three feet with any material, what about the cost of maintenance of way? Would that be affected?

Mr. MOODIE. To some extent for a few years it would be affected, but it would not be a very big item.

Mr. WILKIE. Could you put any figure upon that item?

Mr. MOODIE. No, it is not such an item as I would care to put a figure on. It is not a large item, additional maintenance due to new work.

Mr. WILKIE. Then the railway has some property on the Rainy river, a strip of land I think 2,300 feet long. Will you tell us briefly what that is? I understand it is a strip of about thirty feet wide on the waterfront of Rainy river.

Mr. MOODIE. Right in the heart of Fort Frances.

Mr. WILKIE. And on that at the present time I understand there is built a railroad.

Mr. MOODIE. A railway track.

Mr. WILKIE. Which is at the present time operated by one of the Backus interests.

Mr. MOODIE. Yes.

Mr. WILKIE. That track is elevated to what extent?

Mr. MOODIE. It was originally put up to 500 when it was built.

Mr. WILKIE. If the water level is raised to 500, the water level will be almost level with the top of that embankment.

Mr. MOODIE. Yes.

Mr. WILKIE. You are not operating trains upon that at all?

Mr. MOODIE. No. That strip was granted to Mr. Backus or his associate companies under a license of occupation.

Mr. WILKIE. If the water level is raised, what about that road?

Mr. MOODIE. That piece of track?

Mr. WILKIE. Yes.

Mr. MOODIE. It would affect Mr. Backus, of course, more than it would affect us. He operates only over that portion of the railway. It would have to be raised and strengthened.

Mr. WILKIE. But you are not so much concerned with that as with your other line. Approximately, for the safety of the road, whatever interest you have in it, about how high should it be raised?

Mr. MOODIE. I would infer probably about two feet or a little more.

Mr. WILKIE. Roughly, how much would that cost? I do not want you to go into detail about it.

Mr. MOODIE. About \$7,000 or \$8,000.

Mr. CLARK. Would there be any other way of protecting the track?

Mr. MOODIE. It would be under water if the water came up.

Mr. CLARK. You could not dyke for it?

Mr. MOODIE. It is a dyke itself.

Mr. WILKIE. It performs a double function. It is a dyke and on top of the dyke is the track. Mr. Backus built the dyke and

it is the road on it. We are not so much concerned with it, but we want to present it because it is necessary for us. Mr. Moodie, unless you have something more to tell us, I think that concludes your testimony.

Mr. BACKUS. What are the total figures that you estimate the expense to be in reconstructing the track as you recommend it?

Sir WILLIAM HEARST. \$825,490.

Mr. BACKUS. How much of that \$825,490 applies to the rock fill section of the roadbed?

Mr. MOODIE. Were you here when we were going through what we call Tye's figures?

Mr. BACKUS. Yes, but I do not care anything about that. I just want the dollars and cents.

Mr. MOODIE. I cannot give you that right off the bat. Mr. Tye has made his estimate and we have increased his prices.

Mr. BACKUS. Just take your pencil and give the figures.

Mr. MOODIE. I cannot tell you because he has one item of 237,300 cubic yards of gravel filling. He has some other figures of slope wall, rock fill, rock ballast, and so on.

Mr. BACKUS. Have you not made any estimate yourself of the cost of that section of the road where the rock fill is?

Mr. MOODIE. Yes.

Mr. BACKUS. What is that additional expense?

Mr. MOODIE. That is in the hands of the engineers, and I only have the total of the engineers' estimate, \$825,490. That is the railway computation based on a three-foot raise. Mr. Tye's estimate is based on a two and a half-foot raise.

Mr. BACKUS. I was trying to separate that part of the roadbed which is represented in the section where the rock fill is.

Mr. MOODIE. That can be quite easily done, but it will take quite a little time.

Mr. BACKUS. Then we will just eliminate that for the present and I would like to have you figure it before the Commission gets through.

Mr. MOODIE. It will be furnished to you if possible.

Mr. BACKUS. But the \$825,490 covers twenty-four miles of roadbed.

Mr. MOODIE. Portions of that.

Mr. BACKUS. Will you please take your pencil and show how much that is per mile—\$825,490 and 24 miles.

Mr. MOODIE. There are some miles with nothing on them. Cannot you divide it up yourself?

Mr. BACKUS. I want you to testify.

Mr. MOODIE. What do you wish—\$825,490 divided by 24?

Mr. BACKUS. Yes, if that is the mileage.

Mr. MOODIE. In round figures \$35,000.

Mr. BACKUS. If you will be kind enough to segregate the rock fill section, I would like to know how much it is a mile. If there are two miles of the rock fill and that is \$100,000 or \$200,000, I would like to get the cost per mile outside of the rock fill itself. You are willing to have this Commission understand you to say that you think \$35,000 a mile for this 24 miles is a fair estimate of the cost of reconstructing that roadbed.

Mr. MOODIE. Do you understand, Mr. Backus, that there are two miles of that on heavy rock filling?

Mr. BACKUS. I do, and that is the reason I tried to segregate it.

Mr. MOODIE. The greater portion of the estimate is concentrated on that.

Mr. BACKUS. That is the reason I asked you to segregate that part of it.

Mr. MOODIE. I personally did not make the railway estimate. I am an operating officer now. I am no longer in the engineering department. It took one of our men several weeks to do it. It will be folly for me to take this estimate now and segregate one mileage from another. I could not do that without going through it with the man who made it. Any details of the estimate will be furnished to you gladly.

Mr. McCUMBER. Just furnish it to the Commission so that it may be filed at your convenience. It does not need to be done right away.

Mr. BACKUS. Am I correct in assuming that before this roadbed was constructed, it was necessary for you to file profiles and plans of the road with the Department of Public Works at Ottawa, or what is the procedure in the construction of railroads in Canada?

Mr. MOODIE. The procedure now is different from what it was in 1900 or 1899 when this road was constructed.

Mr. BACKUS. What was the plan then?

Mr. MOODIE. The plan then was to furnish the proposed plans and profiles to the Department of Railways and Canals. The railway commission was not created until 1904.

Mr. BACKUS. But the proper department at Ottawa.

Mr. MOODIE. The proper department at Ottawa.

Mr. BACKUS. Have you a copy of the plan that was filed at that time?

Mr. MOODIE. Of the profile?

Mr. BACKUS. Yes.

Mr. MOODIE. These are all already in the hands of the Commission.

Mr. BACKUS. Of this Commission?

Mr. MOODIE. Yes. At the last hearing.

Mr. BACKUS. Those plans are on file with this Commission and we can have access to them?

Mr. MOODIE. Yes. The original profiles as they are known.

Mr. CLARK. When were they furnished to this Commission?

Mr. MOODIE. Some nine or ten years ago when this work was under discussion.

Mr. CLARK. The Lake of the Woods reference?

Mr. MOODIE. Yes.

Mr. BURPEE. They are on file in the office.

Mr. POWELL. In our office at Ottawa and you can get them there.

Mr. BACKUS. Do I understand that you stated yesterday that the elevation of the rock fill is 507.2 at the base of the rail?

Mr. MOODIE. I can not carry all those figures in my head. I do not know if I answered a question to you of that nature.

Mr. BACKUS. That is the way I understood the answer. Am I correct?

Mr. MOODIE. It is substantially that, I am informed.

Mr. BACKUS. That means that the rail would be seven feet six inches above high water if the lake elevation was raised to 500?

Mr. MOODIE. That would mean it would be about six feet two inches above 501.

Mr. BACKUS. But if the lake level were 500, the top of the rail would be about seven feet six inches above the water.

Mr. MOODIE. A little more, seven feet seven inches.

Mr. BACKUS. Do I understand you to contemplate seriously that there would be any danger, even with the waves rolling a very small portion of the time and a very small portion of the time in practical operations the lake can not be held at 500? If we had the authority to raise the lake to 500, the number of days in the year would be comparatively small that the lake would be at 500. Do you really seriously want this Commission to understand that you think there is any danger in that?

Mr. MOODIE. I was at Fort Frances in 1916 when the dam was at an elevation of 497. The water in Rainy lake was 500.9 or 3.9 feet above the level of your dam at Fort Frances. If your dam is at 500 at Fort Frances and the same conditions prevail, the water might then conceivably be 503.9 on Rainy lake.

Mr. BACKUS. You will agree with us that if the suggestion we have made is carried out and the waters above Rainy lake are under control and the discharge from Rainy lake is uniform throughout the year, conditions will be very different from what they were in 1916 when the inflow into Rainy lake was a flood and every opening

at the dam including the water wheels and waste gates were open and we were pulling through there 42,000 second feet of water creating a difference between the lake level and the level below of nearly two feet.

Mr. MOODIE. I would be very happy to believe that if it would obtain always.

Mr. BACKUS. It would be just the normal condition with the lake calm—I do not mean calm from wind but the inflow regulated and the outflow regulated, and we are not proposing that we should regulate those dams ourselves. If this suggestion is carried through, we are perfectly willing that this Commission should establish a tribunal in order to control those waters. Do you want to compare such a situation as that with the situation which existed in 1916? Do you think it is fair?

Mr. MOODIE. Well, you and I could argue this all day.

Mr. BACKUS. I am asking you the question, yes or no?

Mr. MOODIE. I do not agree with you.

Mr. BACKUS. That is all right. That is the answer.

Mr. McCUMBER. Will you say why you do not agree so that the Commission may have the benefit of your reasons.

Mr. MOODIE. Our position is different from that of Mr. Backus. We have a territory west of us that has to be protected. These railways have to be maintained safely for the carriage of traffic. We have had experience of high water before. I believe probably regulation might do something, but accidents happen and humans are fallible.

Mr. McCUMBER. You think those regulations would be beneficial to you provided there were not any unforeseen accidents?

Mr. MOODIE. Certainly.

Mr. McCUMBER. But there might be accidents.

Mr. MOODIE. No one can guarantee to the railways that such things will prevail and such levels will prevail.

Mr. BACKUS. Of course, it is going to be necessary, if we are to be confronted with any such evidence as you have submitted here, to make our own surveys and bring in our own report, to cover the very facts you have been covering. Can we get from you from time to time whatever permission is necessary and the data the Commission is entitled to so that we need not bother them?

Mr. MOODIE. We have always granted that and we will accommodate you as far as we can.

Mr. BACKUS. I do not agree at all that the Canadian National Railways, the Canadian Northern, have a claim of a penny as long as the level does not go above 500 because they had ample notice that was the place where we tried to secure the control of the lake.

Mr. MOODIE. You yourself stated the water went six or sixteen inches above the dam level in the lake?

Mr. BACKUS. But the lake level is to be 500, not the dam, and you do not claim to have any ownership in this little road that we operate between here and the Shevlin mills. Mr. Wilkie seemed to be confused on that.

Mr. MOODIE. We own the land.

Mr. BACKUS. The road is built on the land we got from you.

Mr. MOODIE. I think I said we were not particularly interested in that railway.

Mr. BACKUS. Let me give you my views on that. The water will be lower than the road on that land and I will guarantee you we need not have to spend a dollar bill on it.

Mr. WILKIE. We can get rid of that phase of it very well. In reality the people interested in that are not ourselves, but you and the Town of Fort Frances. If you build the dyke high enough to protect your railway and the people of Fort Frances we will not bother you about it.

Mr. POWELL. Have you any data to give us as to the venting capacity of your works here to-day as compared with the cross section of the river in its natural state?

Mr. BACKUS. We will prepare those figures. I could not give you them offhand. We have also the discharge capacity at Ranier where the Canadian National-D. W. & P. bridge is. The discharge capacity through that point is less than it is at our works.

Mr. POWELL. The old Fort Frances locks were there. Politicians in Canada know a great deal about that even though they never saw it. Would these works interfere with the venting capacity of a stream?

Mr. BACKUS. They would increase it. We have gates at the head of the canal lock or the old lock canal.

Mr. MAGRATH. Do you persist in saying that in 1916 you were doing everything in your power to let the water out of the lake here?

Mr. BACKUS. I did not intend to say that. The people of the upper rivers like the Virginia and Rainy lake people were asking us to let the waters go at Kettle falls and the people at Warroad and Kenora were trying to get us to hold them back.

Mr. MAGRATH. What were Mr. Tawney and myself trying to do?

Mr. BACKUS. We turned the works over to you.

Mr. MAGRATH. I never knew you to turn anything over.

Mr. BACKUS. Let me ask you this question. When we gathered here at that time, did I not say to you and Mr. Tawney: Now, you take charge and I will carry out your instructions?

Mr. MAGRATH. I must confess I do not remember that, Mr. Backus. What I did understand you to say a moment ago was that every effort was being made to let this water out of Rainy lake at that time.

Mr. BACKUS. I made the statement that when all the openings were discharging the water here in flood conditions at that time and the water was coming in above, the situation was very different, with those conditions, with what flowed in above in the flood time and what was being pulled out down here below, the difference in elevation would be all the way from one to two feet.

Mr. POWELL. Maybe we can harmonize your recollections in this way. Did you delay the progress of the thing even though at the commencement you did not open up and give full vent to the water?

Mr. BACKUS. No.

Mr. POWELL. After they had requested you to do so, I presume you did what they wanted.

Mr. BACKUS. Yes.

(John W. Porter was called as a witness on behalf of the Canadian National Railways and testified as follows:)

Mr. WILKIE. What experience have you had in railway engineering?

Mr. PORTER. I have had twenty-four years experience in Canada in railway engineering in various positions such as divisional engineer of construction, chief engineer of construction, northern Quebec, northern Ontario, Hudson Bay Railway and the western region of the Canadian National Railways.

Mr. WILKIE. Have you knowledge of both construction and operating?

Mr. PORTER. Yes, sir; I have more knowledge of construction than operating.

Mr. WILKIE. I understand you have nothing to do with this line we are dealing with.

Mr. PORTER. No.

Mr. WILKIE. Nor with operating it?

Mr. PORTER. No.

Mr. WILKIE. Are you familiar with the effect of water standing about railway fills?

Mr. PORTER. Yes.

Mr. WILKIE. I am not going into details with you, but will get you at once to the point. Have you read Mr. Tye's report?

Mr. PORTER. I have.

Mr. WILKIE. You realise that he suggests an elevation of the line of two and a half feet?

Mr. PORTER. Yes.

Mr. WILKIE. What do you say as to that raise of two and a half feet with a raise of the water of three feet?

Mr. PORTER. I think we should enjoy the same margin of safety above the proposed regulated level as we have to-day, namely three feet above 497.

Mr. WILKIE. In reaching that conclusion are there any considerations in your mind which appear to have escaped Mr. Tye?

Mr. PORTER. Mr. Tye assumed or figured that these upper dams are going to be built, that Rainy lake, the dam here at Fort Frances, will be controlled by the International Joint Commission and that the control of the dam here would probably be based on Rainy lake and on the interests on Rainy lake.

Mr. WILKIE. In point of fact we had brought out here this morning—perhaps I need hardly have said anything about it, but when the dam at Rainy lake is opened to permit the water to pass through it, what effect has that upon the tail waters below?

Mr. PORTER. As I undersand it, it would raise the tail waters below.

Mr. WILKIE. And in opening that dam to reduce the level of Rainy lake, what effect has that on the waters down below?

Mr. PORTER. It would raise the tail waters and also have an effect on the interests lower down the river, I would think.

Mr. WILKIE. Is the margin of safety in question in fills, the foot of which is exposed to water, affected by the volume of traffic?

Mr. PORTER. Yes. If the fills were lapped by water, it would affect the safety, soften the roadbed and consequently heavy traffic over this line would not have the same safety.

Mr. CLARK. Would the character of the fill make any difference?

Mr. PORTER. Yes.

Mr. CLARK. What about rock fill?

Mr. PORTER. There would be no capillary attraction through rock fill.

Mr. WILKIE. What about the bridges and the necessity of raising them?

Mr. PORTER. The bridge, it seems to me, should provide the same factor of safety as exists now, and you have also to comply with the regulations of the Public Works Department and navigation, and we should figure on complying with that and also provide the safety during high water when things might be floating around and logs and so forth might come into contact with the steel work, the lower members of those bridges.

Mr. CLARK. Your idea is that you should raise the bridges the same as you raise the tracks?

Mr. PORTER. Yes.

Mr. WILKIE. Have you considered the problem of how to raise the bridges, how that is to be done?

Mr. PORTER. No. Some of the bridges would probably be easier than others but I have not considered the matter. On account of the depth of the abutments on some of them it would be difficult to transfer the operating, and especially onto some other pedestal when you were raising the other pedestal. A bridge company would have to be taken into consultation before the engineers could give a statement in regard to that, but it would be a very expensive operation.

Mr. WILKIE. Then I understand, in effect, the raising of the bridge is so difficult a matter that you would not care to put your estimate upon what it would cost?

Mr. PORTER. That is exactly it, without doing what I said.

Mr. McCUMBER. Would you say that if the level was raised three feet, the company would consider the danger sufficiently great that it would raise the grade three feet and proceed forthwith to do it.

Mr. PORTER. Yes sir. I figure it would be safe to raise it three feet.

Mr. McCUMBER. No, but do you consider it would justify the expenditure of five or six hundred thousand dollars to raise that the other six inches above that reported by Mr. Tye?

Mr. PORTER. Yes sir.

Mr. McCUMBER. In making that calculation you have considered conditions just as they are at the present time before us?

Mr. PORTER. All conditions.

Mr. McCUMBER. Other conditions on the upper lakes to remain as they are now? If you felt assured there would be some control of the waters, not by Mr. Backus or any other interested parties, but by a totally disinterested commission looking only to the welfare of all persons, would this control affect your judgment in any respect as to the necessity of the higher level of your railroad?

Mr. PORTER. Well, it might slightly, but as has been pointed out before, so many unforeseen things happen during flood times, the man who is responsible for getting trains over this track and the track would have to have a margin of safety to take care of anything going wrong, even with the best commission controlling it.

Mr. McCUMBER. Would not the margin of safety be somewhat increased by reason of the control of those upper waters?

Mr. PORTER. Well, I do not think so.

Mr. McCUMBER. You think not?

Mr. PORTER. I think not. Personally, I would not care to place very much trust in times of big floods. I would be afraid something

would go wrong, so that we would have to retain the same factor of safety.

Mr. McCUMBER. In a great flood, the control in the upper lakes would be of some benefit, would it not?

Mr. PORTER. Some benefit.

Mr. McCUMBER. But you are doubtful whether it would be such a benefit as should reasonably be taken into consideration at all in determining what your factor of safety should be.

Mr. PORTER. That is it.

Mr. BACKUS. You are talking about flood waters in general. In a flat country as this is mostly, with a drainage area of 15 or 16 thousand square miles, it would run off very sluggishly with storage dams above; would that make any difference, in your opinion?

Mr. PORTER. It might.

Mr. BACKUS. In a mountainous country I can understand how you would say the reservoir dam might break away. In this country the run-off is very slow. As a rule you do not get high water here until the end of June.

Mr. PORTER. But it has happened to come down fast.

Mr. BACKUS. In a flood season where the whole country was flooded and no chance of reservoir storage, it is true.

Mr. PORTER. Yes.

Mr. BACKUS. But even 1916, the high water occurred in June, the very last of May and the first of June as the records show.

Mr. PORTER. Yes.

Mr. BACKUS. Would that not make some difference in your opinion about this?

Mr. PORTER. Oh, if I went into it fully, it might modify it a little bit, but still the danger is there.

Mr. PREUDHOMME. Do you know whether Mr. J. G. Sullivan has made a study of the subject?

Mr. PORTER. I do not know whether he has made a study of it.

Mr. PREUDHOMME. You know he has been over it.

Mr. PORTER. I know he has been over the line.

Mr. PREUDHOMME. Who is he?

Mr. PORTER. He is a consulting engineer of Winnipeg, a very eminent engineer, in my opinion.

Mr. PREUDHOMME. Has he had some railroad experience?

Mr. PORTER. A great deal of railroad experience, chiefly with the Canadian Pacific.

Mr. PREUDHOMME. For how long?

Mr. PORTER. A number of years.

Mr. PREUDHOMME. Do you think his opinion would be worth something?

Mr. PORTER. It certainly would.

Mr. PREUDHOMME. Mr. Sullivan is here and he has made a study of the subject and he will be willing to answer any question which the Commission would like to put to him or make a statement if the Commission would wish to hear him. He is a Winnipeg man.

Mr. CLARK. We would be glad to interrogate or to hear statements from Mr. Sullivan after this present inquiry is concluded.

Mr. WILKIE. This will be a very opportune time to do it. I have reached my conclusion, so far as I can proceed at the present session. The detailed estimate which we have is not ready for presentation to you. Some of it has been worked out, but we want it to be checked and I do not want to hand it in until it is thoroughly checked.

(John G. Sullivan was called as a witness, and testified as follows:)

Mr. SULLIVAN. Mr. Chairman, I have no statment to make other than to answer questions of the Commission.

Mr. MAGRATH. Have you heard the estimates that were submitted here by the Canadian National Railways in respect to the improvements on the section of the road that is affected by these questions?

Mr. SULLIVAN. Yes, sir.

Mr. MAGRATH. What have you to say about them, Mr. Sullivan?

Mr. SULLIVAN. Well, this is a very difficult job.

Mr. MAGRATH. Before you go into that will you state what your experience is?

Mr. SULLIVAN. I have been on railway construction and maintenance and operation since 1888. During the last seven years I have been in private practice and consulting engineer for the Canadian Pacific Railway.

Mr. MAGRATH. And you are engaged in both countries in engineering work?

Mr. SULLIVAN. Yes.

Mr. MAGRATH. Go ahead.

Mr. SULLIVAN. You have fills there that are nearly 100 feet high, at least 100 feet from rock, and you have swing draw bridges with counter weights on them to be raised. It is very difficult to estimate the cost. I do not know how a man can do it. If they try to do it today it might cost \$10 a yard to put in material. I do not suppose a train could get out on that track more than fifteen minutes at a time. So I do not feel capable of criticizing the estimate by the engineers. It might cost a good deal more than they have estimated according to the time they required to do the work. It is very difficult to estimate the cost of doing work under traffic.

Mr. MAGRATH. What have you to say about Mr. Tye's quantities?

Mr. SULLIVAN. That is another matter that is rather indeterminate. I think that Mr. Tye's quantities and his method are all right. I am inclined to think that Mr. Tye's method would be a good sound engineering method of doing that.

We have rock retaining walls in the mountains as high as thirty or forty feet. It is true that they are on a more sound base, but this rock fill comes to such a state of rest now that I am inclined to think it would carry the extra load without any interference.

I would modify Mr. Tye's plan a little. I would carry the retaining walls right up to the base of the rail. That would act as more protection for the water hitting on the rail in the fall when it was cold. The reason we put our ballast higher than the subgrade was to allow for drainage, but with rock ballast that feature would be eliminated and you would have a little better protection by carrying the slope walls of those fills right up to the base of rail, in my opinion.

That might add a little to the cost, but I think it would be safer than trying to dump an enormous amount of rock. If we raise three feet now that means about $4\frac{1}{2}$ feet horizontal and with both sides doubling that would be nine feet, and carrying them down to a depth of 75 or 80 feet means an enormous amount of material.

In addition to that, I believe in some cases the original fill has settled probably two feet, so that it would mean 15 feet in width to get it up to where, I understand, the railway company's officers have testified that that portion of the work would be borne by themselves.

Mr. CLARK. Your view, then, is that these retaining walls at the sides would be sufficient to give protection at the present level?

Mr. SULLIVAN. No; not at the present level. My experience has been that, as Mr. Tye said, you have to have a factor of safety. It has been said that with controlling the waters at the heads there would be no danger. Well, dams give way at times. The water comes at a time in June when those reservoirs will be filled, and that is the time we are apt to have heavy rains. It has also been testified that the opening at Pithers Point will not let the water through. That is just exactly what the company has to contend with. I am of the opinion that if I was in charge of that work I would want the three feet that these engineers have asked for.

Mr. MAGRATH. What have you to say about Mr. Tye's professional standing on this continent?

Mr. SULLIVAN. I do not think there is any better.

Mr. MAGRATH. What have you to say about his estimates of quantities that he believes essential to protect that road?

Mr. SULLIVAN. I would be willing to take his judgment, and I have testified already that I think his plan is right. I am inclined to think that he is a little low on prices. His prices might have been all right for straight work if you had a large amount of it and traffic did not interfere with the work, and, of course, the cost of work at that time was lower than it is at present.

Mr. MAGRATH. Have you any opinion to offer in respect to the prices fixed by Mr. Moodie?

Mr. SULLIVAN. As I said before, it might cost more or less, dependent on how much it interfered. I would think Mr. Moodie had probably more experience in the last two or three years than I have had in that kind of work.

Mr. MAGRATH. Is there anything else you care to say?

Mr. SULLIVAN. No; I do not think so.

Mr. POWELL. Mr. Sullivan, about this masonry that you have talked about; objection has been made to dry masonry. Do you think dry masonry would do for this elevation of the roadbed?

Mr. SULLIVAN. We can now pour concrete about as cheaply as dry masonry.

Mr. POWELL. About what width would be required for an elevation of, say, three feet?

Mr. SULLIVAN. The slope is probably between one and a quarter and one and a half. I did not go into that detail. You could build a dry masonry wall in a slope of half to one. So you could go down until you did get a solid base at that elevation and come up to obtain full width at the top. I do not think the limits of the wall would be full in any place, even going up the subgrade, greater than five or six feet, and on account of the waves you would want pretty heavy stone for the wall. I would want a wall two or three feet thick at the top.

Mr. POWELL. Reference has been made to ice forming there.

Mr. SULLIVAN. There is pretty deep water there in some places. It might be that the spray would freeze. I have known of spray at other places freezing. That is a factor.

Mr. BACKUS. Mr. Sullivan, in that case would it not be possible to protect the track against the spray in some other very economical way rather than raise it?

Mr. SULLIVAN. Mr. Backus, I was in charge of some work about thirty years ago along Puget Sound and we built splash boards there, but I would not advise them here because you have too much suction and would have your track locked within ten minutes if you put up splash boards to keep the spray off. You cannot put them up and remove them; the cost would be prohibitive.

Mr. POWELL. You are familiar probably with some of these winter communications by water, such as between the main land of Canada, of New Brunswick and Prince Edward Island?

Mr. SULLIVAN. I have been down there, yes.

Mr. POWELL. Is there any provision, and, if so, what, for the protection of the track from the splashing of the waves?

Mr. SULLIVAN. What road have you in mind?

Mr. POWELL. The Cape Tormentine & Borden.

Mr. SULLIVAN. I do not happen to know that road. The Canadian Pacific bought a road from Halifax down to Yarmouth. There the ice and freezing in the winter have done considerable damage to the concrete piers. We talked that over while I was in Montreal. I do not recollect any place now down there where the roads were on the seacoast.

Mr. POWELL. But I am speaking about the piers that project out.

Mr. SULLIVAN. At the docks?

Mr. POWELL. Yes; at the docks.

Mr. SULLIVAN. I am not familiar with that.

Mr. POWELL. Do you know anything about the Gut of Cancer where the ferry is?

Mr. SULLIVAN. No.

Mr. MAGRATH. Are you through, Mr. Backus.

Mr. BACKUS. Yes, sir.

Mr. WILKIE. Mr. Sullivan, the reason for building on top of this rock fill the dry wall instead of the ordinary fill construction is for reasons of economy?

Mr. SULLIVAN. Well, it might be safer, too. You might start a slide there some place. Your profiles show that this fill is not resting on solid rock. I do not dispute your engineers' ability to maintain that road and dump rock over now that they have the grade.

Mr. WILKIE. If that were built in the way that Mr. Tye suggests; that is, on top of this rock fill—what is it, a dry wall?

Mr. SULLIVAN. Yes; or concrete.

Mr. WILKIE. Would the resulting fill be as good a construction as it is now?

Mr. SULLIVAN. I think it could be made just as good.

Mr. POWELL. And that would save enlarging the section of the embankment, would it not?

Mr. SULLIVAN. Yes.

Mr. WILKIE. I do not want to ask you to do anything that you can not do, but if you can help us out with prices it would be well.

Mr. SULLIVAN. It is a pretty delicate thing to do working under traffic. I have already testified that it might cost ten times your

estimates if they went out and tried to do it to-day. We had a hard time getting through with a motor car to say nothing of going through with a work train.

Mr. WILKIE. Did you consider the question of raising those bridges?

Mr. SULLIVAN. That could not be done during navigation season if the openings were there. It would have to be done in winter.

Mr. WILKIE. What do you say as to the difficulty of it?

Mr. SULLIVAN. I think I will renig a little there. It is a pretty big job. My opinion is that you would have to do that in the winter and I think that you would have to get some kind of material like cut stone, but once you got it up to the right height you would have to have some material to shove under it. You could not raise it in concrete very well. After you got it up you would permanently hold it probably by granite blocks. I think you could get granite blocks of at least three feet in diameter that would be safe. However, the bridge engineers might devise some other means of doing it.

Mr. WILKIE. We have been informed by everybody that it would be a very difficult task.

Mr. SULLIVAN. Yes; you might have to take down some of those counter weights. In one bridge in particular that would not be so hard because it is kind of connected. On other bridges it would be more difficult.

Mr. WILKIE. Then, we have had some differences; that is, Mr. Moodie's estimate as to the cost of raising these bridges is considerably higher than that of Mr. Tye. What do you say as to the possibility of an accurate estimate on them?

Mr. SULLIVAN. It is impossible to make it very accurate. As far as the bridge is concerned it is almost pure guesswork, but so far as other work is concerned Mr. Moodie's estimate, I think, was nearer the mark than Mr. Tye's.

Mr. MAGRATH. Are you connected in any way professionally with the Canadian National, Mr. Sullivan?

Mr. SULLIVAN. No.

Mr. CLARK. Are you through, Mr. Wilkie?

Mr. WILKIE. Yes; I have produced all the testimony for today I have.

Mr. CLARK. Are there any other interests that would like to be heard now? I understood there were some of the resident farmers who wanted to be heard.

Mr. MURRAY. The Shevlin-Clarke Company's representative is here.

Mr. CLARK. Mr. Pratt, you may proceed now.

STATEMENT OF MR. ALBERT F. PRATT

Mr. PRATT. If the Commission please, a considerable number of the representatives of the departments and bureaus which I entered an appearance for, at their request, at the opening of the hearing, have stated generally to me that the general situation with respect to the waters which are now in a state of nature have been so well presented by the representatives of the different clubs and organizations that for the preliminary purposes which we are now attempting to consider they will rest very largely upon that presentation and not take up the time of the Commission further.

The Game and Fish Commissioner has requested, however, that a short statement from him be read into the record, which is, as I understand it, to be taken strictly in a preliminary sense and be general rather than based upon the information which necessarily will be required later; and, with the permission of the Commission, I will read that short statement:

Generally speaking, higher water levels are beneficial to fish life. However, any substantial increase in water levels over and above that ordinarily maintained in a state of nature over a long period of years will naturally destroy the natural spawning beds of fishes of the shallow water spawning species, as well as the aquatic plant life found in such shallow waters, and no one can foretell how many years will be required to reestablish or develop new and proper spawning places. In addition there is involved the problem of the development of plant life, not only that vitally necessary and essential in the life of all species of fish at certain period of life of each, but that upon which migratory birds are dependent for food supply during breeding season, but during flight as well.

Generally speaking, it is not high water levels which are destructive to fish and aquatic plant life, but rather a varying and irregular artificial change of water depths and levels. For example, if the normal or average water level in a lake or stream be taken at benchmark 500, and through the construction and operation of a dam the water level behind or above such dam be raised 15 feet or to benchmark 515, such level maintained for a period, of, say, weeks or months, and then lowered to benchmark 505, or lowered 10 feet, such radical and artificial variation in level would prove, and has by experience been proven, to be absolutely destructive to fish and plant life.

As a concrete example, conditions prevailing in the head waters of the Mississippi, occasioned by the so-called flood control reservoir dams, maintained the past few years by the federal government may be cited, as well as the situation in Lake Kabetogama developed by the operation of the Kettle falls dam. As a result of the failure on the part of the government to maintain a uniform stage of water in the head waters of the Mississippi, pike and other species of fish are rapidly disappearing and the game and fish department has experienced great difficulty in obtaining a sufficient amount of spawn the past two years to operate its pike hatcheries particularly at their maximum capacity; in fact, in the spring of 1925 the hatcheries were only operated at 49% of the maximum capacity, and therefore the production of pike fry was 49% of the 1924 output.

Shallow water spawners of the finny tribe can easily adjust and accustom themselves to changing water conditions brought about by spring floods and abnormal precipitation at other seasons, but cannot do so when abnormal artificial conditions are developed. Therefore, if a reservoir or storage project affecting the boundary waters is ultimately looked upon with favor it is hoped that a maximum height or water level in each chain of lakes affected by the construction of a dam, and a not materially lower minimum height or water level in each such chain may be prescribed to be maintained in the chain of lakes; in other words, that a uniform stage of water will be available and provided throughout a twelve months period, and that such maximum and minimum water level provisions be rigidly and permanently enforced.

In the absence of profiles and contours of the probable affected territory it is hoped that the game and fish department may be given an opportunity to analyze the findings of the Commission's engineers and make comment thereupon before the Commission makes its final report.

With the permission of the Commission, I will file a letter written by Commissioner of Drainage and Waters to the Attorney General, State of Minnesota, and dated September 25, 1925, and which makes various suggestions along this line with respect to the establishment of levels, etc., from a preliminary standpoint:

SIR: The following preliminary memorandum is submitted stating generally the position taken, on present information, by the Department of Drainage and Waters, State of Minnesota, with respect to the subject matter referred to in notice of hearing, Rainy lake levels, of date August 15, 1925, for hearing before the International Joint Commission on September 28, 1925.

1. So far as I have been able to learn there is not available anywhere, unless with the Commission, data on which may be based an intelligent and convincing discussion of the questions submitted in the Commission's notice of hearing Rainy lake levels. Their report on Lake of the Woods levels published in 1915, contains some information on Rainy, Namakan and Kabetogama lakes but none on the lakes and boundary waters lying easterly of these lakes. It must therefore be presumed that the hearing on the 28th is more for the purpose of securing an expression of sentiment from the several interests on both sides of the line concerned as to the general advisability of permitting the use of the boundary waters for the purposes suggested by the questions in Commission's notice of hearing, and that further opportunity will be given to approve or disapprove the merits of any particular plan or plans that may be presented at the hearing after the actual facts have been ascertained.

2. The determination of the economic advisability of converting these boundary waters into the kind of impounding reservoirs for water power development suggested in the Commission's notice involves a consideration of several important factors. The location of the power developments and the industries to be served by them will be a measure of the added benefits to the communities in the form of taxes, business opportunities, employment, etc. Where two separate nations are involved, this question becomes especially important. The purposes for which the power is to be used, whether for private enterprises or public utilities, has a direct bearing on the amount and extent to which the general public may be expected to benefit. If the power is to be used for the promotion of private enterprises will the demand for it

be permanent and will there be a ready market for it within economical transmission distances after the immediate purposes for which it may have been developed have been served? And lastly will the communities and peoples of the two nations involved benefit more from these proposed power developments than from a complete and full utilization of these waters for the purposes for which they are suited as they exist in a state of nature?

3. This last question implies that a conversion of the boundary waters into artificially controlled storage reservoirs will injure or destroy them for the purposes they serve in their natural state. That the artificial raising of a lake to high and unnatural elevations to be followed by the lowering of it to its extreme low stages within a range of six months will seriously disturb natural conditions within and around the lake, will be conceded without argument. Some of these lakes fluctuate many feet in their natural state. Natural fluctuations from extreme high to extreme low stages, however, take place through long periods and correspond to cycles of years of high and low precipitation. Fish life dependent on natural stable conditions for its perpetuation and propagation is given an opportunity to adjust itself to natural gradual fluctuations. On the other hand, in order that a lake shall function ideally as a storage reservoir for the creation of additional power, it must be operated so as to have it at its lowest stage about the time of the melting of the snow and the spring rains, and to have it filled to its maximum capacity about the middle of July or first of August of each year. If the fluctuations permitted under such control are considerable fish life will be seriously menaced if not entirely destroyed.

4. The natural shore lines of these bodies of water have been formed through geologic ages and their value may be said to consist in their rugged, wave worn outlines and in the demarcation which the wave action was formed between the waters edge and the line of vegetation. The size and kind of forest growth is largely that which has been encouraged by conditions which have existed because of past lake stages. A material raising of the surface of the lakes will destroy these outlines and will create a new shore line extending over surrounding meadows and into bordering forests. It will take years for a lake under these artificial conditions to restore anything like attractive surroundings especially when its surface elevations will be fluctuated through long ranges as would be the case in artificially controlled impounding reservoirs.

5. Generally speaking this entire region is sparsely settled with some areas not even remotely explored. Logging operations are fast removing the available commercial timber. The section as a whole does not adapt itself to development by colonization methods. The soil is poor, being largely granite outcrop boulders and gravel, unfit for ordinary agricultural pursuits. Nowhere in this country is there a natural setting which so strikingly typifies the effects of a combination of forests, lakes, islands and cliffs as may be found within the Arrowhead region in Minnesota. California has sold itself to the American people as a place to which those who can afford it may go to spend the winters. Why cannot this region sell itself as a place to which the sweltering Californians and others may come to spend their summers? I believe it can be shown to be a fact that the country knows little about the recreational values of this region, and that the future tourist business that stands to be developed by its natural attractions will be second to none of any forms of industry that may be built up as a result of addition water power development.

6. The development of water power on streams wherever natural conditions makes this economically advisable, and where as a result of such power the needs, conveniences and contentment of the people of the surrounding communities may be better served is a meritorious and legitimate undertaking. Coal is here lacking and wherever its need may be supplied by water power and the saving in power production thus made reflected in cheaper and better service to the general public, the value of water power should be given its weighted place with other uses to which the waters of this region may be put.

7. But as against the value of water power, which may usually be determined in a practical and definite way, what is the value of this region as a recreational and playground? The practical conservationist must ask himself and answer the questions: How should the natural resources of this region be evaluated now for the purposes they will best serve for present and future generations? Will the use of these waters for the promotion and development of private industry along the lines indicated in the Commission's notice of hearing be reflected in greater benefits to a greater number of people in Minnesota and the United States than what can be realized from the use of the waters in their natural state? The business that may be built up by tourist trade, without considering the intangible recreational benefits to be enjoyed by the visiting tourists, is, in my opinion, sufficiently real and specific, and may be determined and expressed in sufficiently tangible terms to merit their serious comparison with the results that may be obtained from water power development. Opportunity to offer such a comparison should be given by the Commission after the facts with respect to the proposed scheme of water power development have been made available.

Respectfully submitted,

E. V. WILLARD, *Commissioner*.

I shall not take up the time of the Commission on these waters which are now in a state of nature. That is a matter to be considered when we get further information.

Coming down to the present situation, that is, those waters which are now in a state of nature, the waters of Rainy lake controlled by the dam at this place and the waters of Namakan, Sand Point, Crane lake and Little Vermilion up to, as I understand it, Loon river, which are more or less affected by the Kettle falls situation, and particularly Kabetogama lake, also affected by the Kettle falls dam, the state is at this time, and will be at all times, interested particularly in a financial way as owner.

In respect to those waters we have confronting us not a theory but a condition, and that condition arises out of the change in the natural conditions made by these operations and works. It has resulted in the flooding of privately owned and state owned land and the damaging of other lands which are not flooded by the wave seepage and otherwise.

It has resulted in a certain amount of destruction of timber owned by the State of Minnesota, and I presume timber owned by private

individuals. We know what the situation is and what has been the result of the levels of the waters as they have been raised by these two dams.

We prepared and submitted to the Commission on or about June 10, 1925, a statement in some detail of the areas of land, the acreage of land, the amount of timber and the value of the timber, estimated of course, owned by the State of Minnesota affected by the present situation at the different levels therein stated. We ask that that be made a part of the record in this case.

While those are estimates and estimates only, they were made as to the areas of land tributary to Rainy lake owned by the state and areas of land tributary to the Namakan project owned by the state; that is, the Kettle falls territory. They were made on the ground, and I may say here that the minimum estimate of values of lands placed by our appraisers was \$5 per acre, and I think the maximum was perhaps \$7 or \$8.

We are unable to go below \$5 irrespective of actual value by reason of our constitution. The constitution fixes the minimum price at which these lands may be disposed of at \$5, and further provides that they may be sold only after appraisal, and the land and timber must be appraised and sold separately. They are appraised and sold at public auction in the various counties wherein those lands are situated. It is further provided that they may not be sold at less than the appraised price, notwithstanding the fact that the standing price is higher than the minimum fixed by the constitution.

So in our estimates we have in detail by our governmental subdivisions done our best to present information as to those two territories only; that is, territory affected by Rainy lake and that affected by Kettle falls; the items described of the various tracts which we claim will be flooded or injuriously affected by the various levels therein stated, together with the estimated value of the timber upon each tract, and those items are before the Commission.

Mr. POWELL. They have been already submitted?

Mr. PRATT. Yes, sir; they were submitted on June 10th of this year.

Mr. BACKUS. May we have a copy of that data, Mr. Pratt?

Mr. PRATT. Yes, certainly.

We have prepared here a map which is hanging upon the wall and which shows the state lands in yellow by parcels; that is, the lands owned by the State of Minnesota throughout this territory, not only the territory which we call Rainy lake and Rat Root river and Kettle falls, but from there east along up this chain of lakes; and we shall be very glad to submit a copy of it if it will be of any assistance to the engineers in their work. I rather anticipate

that they will not need it in their work. My idea is that when their contours are run we can take the official map with those contours and place thereon our lands and within a short period of time can give absolute data estimated according to our law and our constitution of the value of the lands and timber within the contour lines as they appear thereon. So it will be a comparatively simple matter to get accurate data and facts at that time. But if this is of any use we will submit for the use of the Commission and its engineers a copy of the plat which is now hanging on the wall.

It will be noted that the heavy ownership, that is, the ownership of large tracts by the State of Minnesota, is in the western part of this area, that is, tributary to Rainy lake, Rat Root river and Kabetogama which is tributary to Namakan.

Kabetogama is a Minnesota lake, although it flows into boundary waters and connects with Namakan. That country is where the big acreage is now affected and any raise of even a small amount above the present situation will affect much larger areas, as far as the State of Minnesota is concerned and its lands than anywhere else we have any information of along this project, for the reason that that is a comparatively level country.

Judging from our maps and contour lines, that country around Kabetogama lake and from there west and running up towards Rainy lake in the Rat Root river country seems like it was originally a great lake bed which has gradually receded and is now lying, some of it wet and some of it dry. A raise of the water in Namakan at Kettle falls dam, the present raise even, either actually covers when the water is up or indirectly affects by way of seepage and makes sour a large area of that level and flat country, and when the water is up it runs, as we understand it, from Kabetogama right across country, across Old Goldportage that exists between Kabetogama and Rat Root river and makes a large morass swamp out of that country. That is the general situation with respect to those two territories.

East of there, as the map shows, the state owns a considerable number of parcels along the different lakes. What their character is I am not able to say. I am told that is a very fine camping site and others are not, but the area of land east of Namakan owned by the state in this territory affected is not of any great size as a total. At Namakan west is something like 100,000 acres which may or may not be affected by the proposed raise in the levels of Rainy or Namakan.

In that connection there are two things in which this state is vitally interested; that is, in connection with the present situation as well as the proposed raising of Rainy and Namakan lakes. One is the regulation and control of those two waters; that is, on the waters

respectively controlled by the dam at Kettle falls and the dam at International Falls. We consider that a matter of vital importance to our citizens, to the settlers, to the people living in that territory, and to the state itself.

As has already been stated, the water varies and has varied in the present condition very materially, and on Namakan it has gone below low watermark. When I speak of ordinary high water mark, it has been said here that 497 was ordinary high on Rainy, as I recall the statements. We do not agree with that; we think that 497 is considerably above ordinary high, and when we speak of ordinary high on Namakan as 508.50, which I believe were the figures given, we feel that that is considerably above what was the real ordinary high. But those are matters of detail to be shown in evidence and values fixed on those different bases later, as I understand it. The control suggested—and we would like to have the maximum and minimum as nearly together as reasonably proper in connection with the successful and proper use of these waters—is of importance, in that we will then know something about where we are in connection with the lands which we can use. The settlers do not know what they can rely on today in respect to their lands. We do not know what we can do in the way of reforestation in connection with the large area of land which has not been affected as yet but which may be affected if the level of the water is raised, and we are in a condition of ebb and flow with respect to making any definite plans. As has already been stated, all of these lands are in the state forest reserve and are now being held by authority of the Legislature of the State of Minnesota for reforestation purposes. I think it has been stated here that a considerable part even of the cutover lands has quite a nice second growth of timber already started and that timber is out of the water.

MR. McCUMBER. May I break in for a little information for my own use? I want to inquire as to the method of your reforestation and the kind of trees that you are attempting to produce and what trees naturally grow where the timber has once been removed?

MR. PRATT. I am no expert on the subject but I love trees. Starting with the last part of the question first, as we Yankees mostly do, the first growth after cutting is the poplar and wild cherry and general brush. There is a lot of land—and I do not know whether this land is that kind or not—in Minnesota which will start in time naturally a growth of pine of the same variety as originally there. For instance, if it is jack pine land it will start jack pine. If it is clear it will come in clear. If it is white pine white pine will come in.

There is considerable dispute as to whether lands can be reforested with pine. Some experts claim it is feasible and others that it is not. At any rate, Minnesota is spending a considerable amount of

money on what you would call a commercial basis in raising trees. We have several nurseries and we have several forest reserves. They use another name for such a forest; they call it "burnt site" forest. They actually set up thousands upon thousands of seedlings under this first growth of small trees, poplar, brush, etc.

It seems to be the natural history of a pine forest that it will not start in the open; it has to start under shelter; and even in a nursery they generally put shelters on top by way of cloths because of the sun.

Mr. McCUMBER. Then, this poplar, etc. is rather essential for the protection and the earlier growth of the pine?

Mr. PRATT. I understand it is almost absolutely essential and after a terrific fire the next year it will come up like hair on a rabbit.

Mr. McCUMBER. It does not smother out the young pine?

Mr. PRATT. It does not. Pine keeps climbing up and makes its growth straight. In the State of Minnesota we feel that we are doing considerable practical work along that line.

Mr. McCUMBER. I notice a great deal of this country growing up to jack pine around the second growth. What effect has this on the white and Norway pine and the propagation of a new forest of young pine?

Mr. PRATT. No other pine grows where jack pine grows. It grows in its own kind of soil and in its own territory. When you find jack pine you do not find Norway or white pine to any extent. I may be entirely wrong about that, however.

Mr. McCUMBER. In these cuttings where jack pine has come up were there not cuttings of white and Norway pine there before?

Mr. PRATT. I have seen some that way, but I would not want to say that that is the usual procedure in the state of nature. Or it may be different in one place from that of another. In the pine country where I worked jack pine never came up after white pine or Norway. I think you are correct with regard to this sandy territory through here. Whether Norway will follow jack pine or white follow jack pine, I do not know.

Mr. McCUMBER. That is the information I was seeking.

Mr. PRATT. The second matter in connection with the present situation as well as the future situation on these two series of lakes, that is Rainy and the lakes controlled by Kettle falls is the ascertaining of the value of the lands and timber belonging to the State of Minnesota which have been appropriated and taken and for which no compensation has been made. As I say, our estimates are in the data which have been filed. We take it and we have advice to the effect that the fourth question, the last sentence in it, is designed to cover that matter as a part of the present storage. Who has to pay that is

immaterial to us, but we are vitally interested in having that ascertained in some convenient and proper manner and form to be provided as soon as possible. These waters have been up for ten or twelve years or more. Our lands, our timber, have been taken and appropriated for storage and power purposes and we have received no compensation for them. The question naturally arises: Why not go after somebody and get it? Perhaps that is possible, but it is extremely inconvenient and unsatisfactory to go after things in that way to all parties concerned. It does not work out fairly to anybody as a rule. These companies have not power of condemnation. At least they do not exercise it and I understand they do not have it. The state cannot sell below this minimum price I have spoken of. It is trust lands. The state can sue and in fact has sued for damages resulting from this trespass, but a trespass action covers one series of high waters only and the next one comes along and there is some more trespass and six months from then there is another trespass. It is an interminable line of lawsuits and the expense, while the State of Minnesota can stand quite a bit of it, of ascertaining and being able to show the resulting damage from this period of high water and the next resulting damage from the next period of high water during a series of years, would simply eat up all that was realized out of any claim that was prosecuted in that way. For some time we have had in mind and I think the Commission have had in mind—that last I do not know about, but I know we have in mind the ascertaining of some way by which these values may be fixed finally and paid and done with.

Mr. CLARK. In view of what you have stated as to your constitutional provision, I am a little curious over the situation that might possibly arise. If the state cannot sell the land for less than \$5 an acre, suppose it should develop that a good deal of this state land is valueless or rendered useless, but that as a matter of fact it should not be worth \$5 an acre; that its actual value in other words would be much below the constitutional price as fixed. What would be the result in that case?

Mr. PRATT. Our claim will be that \$5 an acre is the minimum which will be considered. What will be the result, I will have to leave to somebody else.

Mr. McCUMBER. That will be your claim, but you do not say that is what the court would find. I understand you have already filed with this Commission a statement of estimated damages.

Mr. PRATT. Yes, at different levels.

Mr. McCUMBER. How do you ascertain the damages in a case of this kind; take for instance, where the property drowned out or injured is jack pine or elm or something that has no commercial

value in it although it may make a beautiful shade tree where you sell lots and so forth around the borders of the lakes. How would you estimate that kind of damage?

Mr. PRATT. In this particular table we have estimated only on a basis of commercial value as stumpage, nothing else. You will notice, when we come to it, the amounts are not very large, and that is perhaps one of the reasons. The estimators made a preliminary estimate and only the commercial value has been placed in it.

Mr. McCUMBER. I could imagine the stumpage value might be almost nothing in many instances, and yet the value of a little piece of property might be materially added to if it has a few shade trees on it when you are selling that for a home. But I understand that was not taken into consideration.

Mr. PRATT. No sir. I will read at random on the Rainy lake and Rat Root lake districts, out of an area of land of 4,700 odd acres, flooded or damaged, the total value of the timber as returned by our estimators is \$550, so it is strictly on a commercial basis.

Mr. BACKUS. You have no contours to guide you. You have taken the forties. If your reports show that the corner of a forty would be overflowed, you have taken the whole forty, have you not?

Mr. PRATT. No. We ran contours on this high water proposition.

Mr. BACKUS. I am glad to know that because this Commission would like to have those contours in order to save a little time with their engineers.

Mr. PRATT. We ran them as best we could, but the Commission's engineers will run them much closer than we did. There is no doubt about that. For instance, there is one 40, ten acres flooded; another 40, three acres flooded; another 40, eight acres flooded; another 80, twenty acres flooded; another 40, three acres flooded; another 40, thirty acres flooded; another 40, four acres flooded, and so on. Those are actual estimates on the ground from general cross sections, whatever you call it, when you run out and then cross section on a contour at those levels. The levels 428 and 429 are quite accurate.

Mr. BACKUS. Do you think the Commission's engineers would run those contours over again?

Mr. PRATT. I did not think it would do us much good to run contours as the Government has never shown any desire to accept any privately-run contours, and I presumed the same would be true in this case. We proceeded on the assumption that figures by private individuals in cases of this magnitude particularly, would not be of any value at all. When it comes to a case where a difference of six inches will make a big difference in damage, the figures would need to be fixed on a scientific basis and we are not

prepared to do that. We have engineers that will do it, but it is not within our reasonable power to go and spend money for that particular purpose. I think I have said what little I have to say unless there are some other questions.

I do not know that I made at all plain this theory of ascertaining these flowage damages as a part of the cost of development in the present or the future, or both, and we are interested very much in that. Our theory is that it is in the nature of an international condemnation, and when we cannot take any other method of getting at it in a convenient, permanent and final way, we thought that was a proper way from the standpoint of the State and from the standpoint of its citizens. So far as the actual work is concerned, it should not be very difficult to get the figures together once the contours are laid out. I assume, as in other cases, some tribunal, which we would prefer to be the International Joint Commission, but it will probably not be, will be appointed to act, to fix these values and to settle and determine them as part of the cost of the development and have it done with. It is a long drawn out affair when we have to figure on several hundreds or thousands of little tracts of land scattered all around these bays and inlets of lake Kabetogama, Rat Root lake, Rat Root river, Namakan, Rainy, and so on, try to get at them under a common law and straighten them out. It is almost impossible.

Mr. ELMQUIST. It might be of interest for the Commission to know how many suits the state has pending for damages.

Mr. PRATT. There are three suits now pending and they are mentioned by the dates of service and the amounts which we made in this return in June.

Mr. MAGRATH. Was that return in answer to the questionnaire which was sent out?

Mr. PRATT. Yes. That was in response to certain information asked for. Part of it we tried to furnish and part of it we could not.

Mr. CLARK. These were actions for trespass against the power companies.

Mr. PRATT. Yes, they have been pending for some time.

Mr. ELMQUIST. Have they been brought to trial?

Mr. PRATT. None.

Mr. CLARK. The member of Congress (Mr. Carss) who has been compelled to leave this hearing and the city at present, has handed the Commission a list of names of individuals who, he said, were present, had been at the hearing and were interested either more or less directly in this proposed project. Just at this time, pending other matters, I would ask if Miss Speer is in the hall. If so, we would be glad to hear from her if she has anything to say.

STATEMENT OF MISS ELIZABETH SPEER

Mr. HURLBURT. Miss Speer, where do you live?

Miss SPEER. In the summer time I live at Beach Point.

Mr. HURLBURT. Whereabouts is Beach Point located with respect to Ranier?

Miss SPEER. About a mile and a quarter from Ranier.

Mr. HURLBURT. Do you own property at Beach Point?

Miss SPEER. Yes, I do.

Mr. HURLBURT. Does this property border on Rainy lake?

Miss SPEER. It is not only bordering but covers a part of Rainy lake in the high water.

Mr. HURLBURT. You mean Rainy lake covers a part of the property in the high water?

Miss SPEER. Yes.

Mr. HURLBURT. How much frontage have you on Rainy lake?

Miss SPEER. Fifty feet.

Mr. HURLBURT. Have you improved this property?

Miss SPEER. I have extensively.

Mr. HURLBURT. What buildings have you put up?

Miss SPEER. I have the main building which I put up last summer and I have added an electric light house which is also large enough to contain some wall beds and accommodation which make it very nice for the tourists.

Mr. HURLBURT. To what expense have you been put in improving this property?

Miss SPEER. I would say approximately \$8,500 or something of that kind.

Mr. HURLBURT. Will you state the effect that an increase in the elevation of the water of Rainy lake of three feet will have on your property?

Miss SPEER. Well, I am not an engineer, but I have been told by various people that if this raise were made my place would be entirely destroyed.

Mr. HURLBURT. Does your observation confirm the statement?

Miss SPEER. The lake last night was very rough and it has been coming up rapidly. When I came back from a trip to Seattle and California last winter, I returned here the middle of May and I found only a little water in the cemented basement at the front of the house underneath the front porch, and now it is up, I suppose, a couple of feet, perhaps more, and in the storm last night it came up on the front porch. It is quite wet all over this morning.

Mr. CLARK. Was that the water of the lake?

Miss SPEER. Yes.

Mr. McCUMBER. Or the spray? Was it the lake itself that came up that high or the spray?

Miss SPEER. I do not know definitely because I was asleep, but it was all wet this morning, everything upon it.

Mr. McCUMBER. It rained last night.

Miss SPEER. I do not know.

Mr. CLARK. It was wet here too.

Miss SPEER. Well, from the way in which the spray was washing and the lake itself, the billows coming in, the white caps and so forth, bringing in logs and knocking against various impediments, the house foundation and I do not know just what, making a great noise arising from the pipe which brings the water from the lake into the kitchen, I imagine it may be some part of the lake also. Of course my testimony is from a purely personal standpoint from the fact that I never was in this region until last summer and I engaged a contractor who was recommended to me to build the main building and told him to put it far enough back from the lake that it would not at any time be endangered. It was about 24 feet back with a beach in front of it, and I had steps going down into this cemented basement which was fixed for lockers for the convenience of bathers, also smoking room, and so forth. The result has been very discomfoting, to say the least.

Mr. CLARK. You would have a fear if the water was further raised, it would destroy your property to a great extent?

Miss SPEER. I am afraid it would.

Mr. CLARK. How high is your house above the present lake level?

Miss SPEER. It comes up over the cemented basement considerably, about two feet or more, three feet perhaps, and in the washing of the waves this morning, it must have been three or four feet.

Mr. HURLBURT. You constructed this building for the purpose of catering to the tourist traffic, did you?

Miss SPEER. Yes, also for the convenience of those whose homes were not large enough for the accommodation of larger parties. I have had parties there of sixty, seventy-five people, various card clubs, civic clubs and organizations of that kind that require a large meeting place. They come out there.

Mr. HURLBURT. This building was in operation last summer?

Miss SPEER. Yes, from the 21st August on.

Mr. HURLBURT. Could you make some statement in regard to the increase or decrease of the tourist traffic this year as compared with last year?

Miss SPEER. It increased very greatly this year, so far as I was personally concerned. Last year I had no accommodation to keep

people over night, but we had parties go there. This year there have been many people there and I have had to turn some away.

Mr. BACKUS. I assume from what you have said, that when you purchased the property and built the building you did not take the precaution to inquire as to the probable level of the lake in the future?

Miss SPEER. I did all of that as much as I could, but being a stranger I did not know to whom to address the questions perhaps, but I assumed that the contractor and those who were immediately concerned would look out for my interests in that respect.

Mr. BACKUS. Well, they did not do it.

Miss SPEER. Well, I do not know.

STATEMENT OF MR. H. A. TIBBITTS

Mr. TIBBITTS. The position the Town of Fort Frances takes and wishes to take in connection with this inquiry is this, that we fully appreciate the advantages that may accrue to the Town of Fort Frances by reason of the interests which Mr. Backus represents. We do not wish to take an inimical stand or to do anything or to suggest anything to this Commission which would hamper Mr. Backus in his operations, or his development for the benefit of the Town of Fort Frances. But we think that Mr. Backus, in presenting his case to this Commission, has underestimated by a great measure the damages that would accrue to the Town of Fort Frances from the proposition which he puts before this Commission. Just as an example of that, Mr. Murray, who represents, not the interests of the Town of Fort Frances, but who is a citizen of the Town of Fort Frances, and who represents before this Commission certain other interests, asked Mr. Backus whether or not in the computation which he placed before this Commission of the possible damages to our town, he included the cost of a drain which Mr. Backus agreed to put in under present conditions to carry off the surplus water, the storm water; the storm drain it was called in 1917. That has never been put in. Mr. Backus placed before you gentlemen a figure, I think, of \$47,000 to cover the possible damage to the Town of Fort Frances including protective works. That is utterly absurd from our standpoint. I wish to file with the Commission—and I propose to do so—a plan of the town sewer system. I further wish to place before the Commission a plan showing what happened in 1916 to the Town of Fort Frances. I am going to file with the Commission a statement from the town treasurer showing the property that would be affected by a raise of the water to the 500 bench mark. The assessed value of that property is some \$86,000. The plan that I will submit to the Commission will show that the town park

would be utterly ruined, some 64 acres of land known as Pithers Point which is almost famous throughout this part of the world as a beauty spot and which belongs now to the town. If the water were raised to the 500 bench mark, this would consist of about two islands. One of the most attractive features of the town park is the beach which would be utterly and absolutely destroyed and drowned out. No protective works can possibly preserve that beach to the people of Fort Frances. No protective works can be devised or constructed that would protect that town park of ours. It is not a matter of dollars and cents to us because you cannot estimate the value of that town park to the people of the Town of Fort Frances. We are not taking the stand that we object to this proposition at all from the municipal standpoint. We believe the maintenance of the lake to a certain level is to our advantage. We suffered during the past year by the fact that Mr. Backus could not operate his mill by reason of low water. We suffered to the extent of \$100,000 of wages by that fact. We do not want as a municipality to do anything that is detrimental to Mr. Backus, but we would ask this Commission to consider carefully what would be the effect upon the Town of Fort Frances before any order or direction or recommendation is made to the governments that those levels should be raised higher than they are to-day. We do not think it is fair that you should ask us to go to the expense of securing the necessary engineering data to prove that it would be detrimental to Fort Frances. The plan which I propose to submit to this Commission shows this, that through the heart of the Town of Fort Frances runs a rock ridge. Upon the north side of that rock ridge underlying the whole Town of Fort Frances is a bed of quicksand. Fort Frances, as I have said, is situated on a peninsula. The seepage is not from the river as regards the northern portion of Fort Frances. It is from the north back. This year in the construction of our sewers we have had great difficulty. If that water was raised to the 500 bench mark we cannot construct sewers in the northern portion of our town and in the southern portion of our town the whole sewer system which I will submit to you has cost us \$261,000, is absolutely useless according to what our city engineer tells us, and what we believe is the fact, but what we cannot prove to you gentlemen is the fact.

Mr. CLARK. Why not?

Mr. TIBBITTS. Because we are not prepared to go to the expense of securing the necessary engineering data to prove it.

Mr. CLARK. Where does your sewage discharge?

Mr. TIBBITTS. It discharges into the Rainy river below Mr. Backus' dam.

Mr. CLARK. How high above the general height of the water in that river is your discharge pipe?

Mr. TIBBITTS. I cannot give you the actual figure, but it is much below because it is below the dam.

Sir WILLIAM HEARST. It is not your discharge that is the difficulty?

Mr. TIBBITTS. It is not our discharge at all that is the difficulty. The plan which I will submit will show this, that up to Scott street which divides the town into two the bottom of every man-hole is below the level which they seek to fix the water at.

Sir WILLIAM HEARST. In other words, you say the water would come in through the upper part of your sewers and through the man-holes because the level would be higher than the level of the street?

Mr. TIBBITTS. We do not know. We are not stating this as a fact. We do not know whether or not it would be necessary to substitute a whole new sewer system in the Town of Fort Frances. Should you gentlemen or should Mr. Backus or the Government of Ontario or the Government of Canada or the Government at Washington ask us to go to the expense of ascertaining that, we say: No, we do not think so, and we are not going to.

Mr. CLARK. That settles it.

Mr. TIBBITTS. That settles it absolutely.

Mr. CLARK. No further argument is necessary on that point.

Mr. TIBBITTS. There cannot be any further argument on the subject.

Mr. CLARK. On that point, I said.

Mr. TIBBITTS. That is what we fear and we direct the attention of the engineers of the Commission to those points. There is this park of 64 acres which the town has under lease for ninety-nine years from the Interior Department of the Dominion of Canada, a beautiful piece of property, which, if you gentlemen would go and see it for yourselves you would realise we cannot estimate its value to the Town of Fort Frances. I do not believe you gentlemen could estimate the value of it to Fort Frances. According to the city engineer's figures, this would be utterly and absolutely destroyed.

Sir WILLIAM HEARST. As I understand the statement you are making to the Commission, it is this that you do not oppose these works provided Fort Frances is protected?

Mr. TIBBITTS. Exactly so.

Sir WILLIAM HEARST. But you make the further statement that it is not possible to construct works that will protect your town park, in your opinion?

Mr. TIBBITTS. In our opinion it is not possible to construct works that will do that.

Sir WILLIAM HEARST. In view of that fact, what is the position of Fort Frances? Are you willing to sacrifice the beauty of your park for the benefit that will be derived by the town from these works?

Mr. TIBBITTS. Absolutely not.

Sir WILLIAM HEARST. Then you will oppose the proposition under any circumstances?

Mr. TIBBITTS. We must oppose it.

Sir WILLIAM HEARST. Your further request is that if the Commission should recommend this proposition, they would see that their engineers would make a report and that the necessary protective works so far as they can possibly be constructed, should be constructed to protect the town.

Mr. TIBBITTS. You have the exact idea. That is our position. We do not wish to oppose the proposition at all if it is possible to protect Fort Frances.

Sir WILLIAM HEARST. You say it is not.

Mr. TIBBITTS. We do not believe it is and we wish the Commission to direct the engineers to ascertain the facts on that subject.

Sir WILLIAM HEARST. You know now you can not protect Pithers Point without a dyke.

Mr. TIBBITTS. We cannot protect it without a dyke, but we would like to have it verified by the engineers of the Commission.

Mr. CLARK. Supposing the engineers of the Commission differ from you?

Mr. TIBBITTS. We will have to submit. We are perfectly willing to leave our position to the Commission.

Mr. McCUMBER. As regards the intake pipe, I understand the level of the lake above the falls is such that if it is raised the other three feet, it will overflow your sinks and basins; in other words, there would be an overflow into the streets.

Mr. TIBBITTS. I was speaking of the disposal of our sewers.

Mr. McCUMBER. Do you mean it would back up that much? There, you have nothing but a discharge pipe and the discharge pipe being below the dam how will that be affected by the raise above the dam?

Mr. TIBBITTS. I am speaking about the main portion of our sewers, that is south of Scott street, which a rough estimate of the plan of Fort Frances will show you is virtually half of the town—that is, the bottom of the man-hole south of Scott street is at such a level that it would be flooded out by seepage back from the river. North of that we say that the seepage comes through from the northern portion of the lake which almost surrounds Fort Frances, and if this water is raised to the level of 501, we have to reconstruct and rebuild our sewage system. That is what we fear. We cannot prove this. Our engineer says this is simply what he thinks

will happen, so we ask the Commission to investigate and see if that will happen. If it does not happen we have no objection so far as that is concerned. That has nothing to do with our town park, of course.

Mr. McCUMBER. But if there is no change in the level below the dam I confess I fail yet to see how the water is going to back up to the man-holes so that damage will occur by raising the surface of the lake three feet. Maybe when we get the detailed statement we will understand it. I do not understand it from your statement.

Sir WILLIAM HEARST. What happened in 1916?

Mr. BACKUS. There was no dyke then.

Mr. TIBBITTS. I will place before the Commission maps and contours showing exactly what happened.

Sir WILLIAM HEARST. That would not be very helpful if there were no dykes then and there are now.

Mr. TIBBITTS. I cannot tell the Commission what might have been the result if there had been dykes at that time. Of course Mr. Backus' estimate of what would protect the town of Fort Frances is perfectly ridiculous. Mr. Backus will admit that.

Mr. BACKUS. Mr. Tibbitts brings up the question of the flood water drain. The arrangement was made when I was absent about a year, by our department here. As a matter of fact it would have been folly with this raise in the levels contemplated to have constructed a surface drain at that time which might have to be done over later if this plan was carried out. For that reason we deferred the matter and we have not put in that estimate at all because that is a thing we have to do anyway ourselves, so that does not come into these estimates.

Mr. TIBBITTS. I want to be perfectly understood—

Mr. BACKUS. I am not criticising you.

Mr. TIBBITTS. And I am not criticising you, but I want it to be placed on the record that we do not oppose this project as long as the Town of Fort Frances is protected.

Mr. BACKUS. I think you are worrying without justification.

Mr. TIBBITTS. We have worried a lot in the past.

Mr. BACKUS. Without justification.

Mr. TIBBITTS. There is one feature of the case I would like to draw to the attention of the Commission, and that is that we as a community believe that we have a right to ask the Commission or any judicial tribunal to protect our interests in Rainy lake. If this proposition is going to deprive us of what we believe is one of our assets, we consider it would be unfair to deprive us of that asset. Rainy lake is a beauty spot. It is one of the great assets of both countries, and we think we are safe in leaving the protection of that and of Fort Frances in the hands of the Commission.

(The following documents were handed in by Mr. Tibbitts in regard to the Town of Fort Frances:)

FORT FRANCES, ONT., *September 28th, 1925.*

I, J. W. Walker, Clerk of the Town of Fort Frances, do hereby certify, under my hand and the seal of the corporation, that according to the records of this municipality, the capital expenditure on the sewer system of the said municipality to the present date is \$135,262.95.

J. W. WALKER, *Clerk.*

FORT FRANCES, ONT., *September 28th, 1925.*

RESOLUTION NO. 379-1925

That Mr. H. A. Tibbetts be instructed to place before the International Joint Commission at its hearing at International Falls on September 28th, 1925, the opposition of this municipality in regard to any attempted raise of the levels of Rainy lake, as set forth in memorandum read to the council this evening, and that necessary copies of memorandum be printed.

RE: RAINY LAKE LEVELS—STATEMENT OF CASE ON BEHALF OF THE TOWN OF FORT FRANCES.

The Municipal Corporation of the Town of Fort Frances desires to place on record its objections to any measure whereby the levels of the Rainy lake are permitted to be raised beyond the level now maintained under existing legislation and existing agreements.

The town contends that the 497 bench mark (P. W. D.) is the limit to which the said waters may be raised with safety to the properties of the Town of Fort Frances; its water works; sewer and drainage systems, and its exceedingly valuable public parks and improvements. In addition, a great deal of valuable private property would be destroyed, and industries which are of enormous value to the Town of Fort Frances, would be greatly handicapped by any interference with the present water levels.

Moreover, the Town of Fort Frances desires to go on record as being satisfied with conditions as they exist at present, and with the method of regulation under the control of the Public Works Department of Canada, and the means adopted by that department of dealing with and preventing flood conditions.

Appended hereto is a plan prepared by D. J. Gillon, Esq., Ontario land surveyor, showing the area within the limits of the town of Fort Frances of the private properties and town interests which would be actually rendered useless by raising the levels.¹

Statements are also attached showing the assessed value of the above properties, and the plan also shows how Pithers Point would be detrimentally affected.

It is pointed out that the town sewer system would be in all probability very seriously affected if there were any raising of the water levels of Rainy lake, and a plan of the said town sewer system is also submitted. The town wishes to submit further evidence and to be heard in support of its various contentions.

In this connection the town is advised and contends that by reason of the fact that a great area of the northern portion of the town is situated over

¹ The plan referred to will be found in the files of the Commission.

quicksand beds, through which, even at the present level of Rainy lake, water seeps through from Stanjikoming or Hay Marsh bays or both, the construction of further sewers in this portion of the town would be tremendously retarded or rendered almost impossible by any additional raising of the water levels.

No attempt has been made by the town authorities to estimate the cost of protection works. It is believed, however, that such protection works would involve the dyking of the river and lake fronts all around the peninsula upon which the town of Fort Frances is situated. It is submitted that no protective works can be devised and constructed that would prevent the destruction of Pithers Point park, since that park depends very largely for its attractiveness upon the splendid bathing beaches which nature has provided there. It is of course impossible to estimate in dollars and cents the value of this park to the citizens of Fort Frances.

The Town of Fort Frances further takes the stand and urges that it should not be under any circumstances compelled to bear the cost of securing engineering data in connection with the above contentions, and in support thereof. All of this expense should be borne by any individual or corporation seeking to alter the conditions now in existence, and the town urges that these conditions and their continuance are part of the inalienable rights of the citizens of the town of Fort Frances, upon which their homes and businesses have been established, and their various investments, public and private, made.

The Town of Fort Frances further urges that it has a tremendous asset in the proximity of the beauty spots upon Rainy lake and its tributary lakes and streams and their attractiveness to tourists, campers, hunters and anglers, and consequently their value to Fort Frances would be seriously and detrimentally affected by the proposed storage scheme.

The town is moreover vitally concerned in the successful operation of such industrial plants as the Shevlin-Clarke Company, Border Lumber Company, and the Lockhart Lumber Company, and that these plants would be hampered to an almost ruinous extent, and the town suffer accordingly, is also urgently pointed out.

Upon the other hand the advantages that could be possibly gained by the Town of Fort Frances are almost inconsiderable. A few thousand horse power of hydraulic or electrical energy available for industrial purposes at this point is the only specific advantage that has been suggested.

The power company interests here have entered into an agreement with the Town of Fort Frances by which the capacity of their pulp and paper mills at this point will be doubled. The obligation of the company to carry out this agreement is in no respect dependent upon the securing of additional power from Rainy Lake. The obtaining of additional necessary power is in no way the concern of the people of the Town of Fort Frances, and negotiations are now pending between the Government of the Province of Ontario and the power company interests, for the development of power upon the Seine river for the additional requirements of the industries at Fort Frances.

The application of the company for the right to develop this power, is based upon the intention of the company to carry out their expansion scheme here.

It is thus quite apparent that from any additional power that would be available at this point, as a result of the proposed storage and regulation scheme, at least half of which would be utilized at International Falls, Minnesota, the benefit to Fort Frances is inconsiderable.

The Town of Fort Frances further urges that the first right to the use and benefit of the waters of Rainy lake and the tributary waters lies in the people who have made their homes and established their industries upon and adjacent to those waters.

It follows therefore that the interests of these people should have first place in the consideration of any judicial tribunal.

It is therefore contended that no measures detrimental to these people should be adopted for the benefit of districts which happen to be situated upon waterways remote from these bodies of water, since both are only entitled to enjoy the condition created by nature, and neither to impose artificial or abnormal conditions upon the other.

All of which is respectfully submitted.

Dated at Fort Frances this 28th day of September, 1925.

H. A. TIBBETTS,

Counsel for the Town of Fort Frances.

1924 Assessment of properties affected at 498 B. M. exclusive of Shevlin-Clarke properties and Pithers Point Park

Lot No.	Plan	Assessment	Lot No.	Plan	Assessment				
66.....	Albt.....	\$600	73.....	Albt.....	1 \$1,800				
67.....	".....	500				".....	".....	1 1,000	
68.....	".....	1,500							74.....	700
69.....	".....	1,800			147.....				700
70.....	".....	600					10,400		
71.....	".....	600							
72.....	".....	600							

¹ Business.

Property owned by the O. & M. Power Co., which is included in this statement.....	\$2,400
Other property.....	8,000
Total.....	\$10,400

1924 Assessment of properties affected at 499 B. M. exclusive of Shevlin-Clarke properties and Pithers Point Park

Lot No.	Plan	Assessment	Lot No.	Plan	Assessment
A.....	Albt.....	\$500	72.....	Albt.....	\$600
36.....	".....	1,000	73.....	".....	1,800
35.....	".....	1,000	74.....	".....	700
34.....	".....	500	147.....	".....	700
33.....	".....	400	140.....	".....	700
32.....	".....	700	150.....	".....	700
31.....	".....	1,200	151.....	".....	1,150
30.....	".....	700	76.....	S. M. 28.....	100
1.....	".....	200	77.....	".....	100
2.....	".....	300	78.....	".....	100
3.....	".....	400	79.....	".....	100
4.....	".....	450	80.....	".....	100
65.....	".....	2,250	81.....	".....	100
66.....	".....	600	82.....	".....	100
67.....	".....	500	83.....	".....	100
68.....	".....	1,500	84.....	".....	100
69.....	".....	1,800			22,450
70.....	".....	600			
71.....	".....	600			

Property owned by the O & M Power Company, which is included in this statement.....	\$10,800
Other properties.....	11,650
Total.....	\$22,450

1924 Assessment of properties affected at 500 B. M. exclusive of Shevlin-Clarke properties and Pithers Point Park

Lot No.	Plan	Assessment	Lot No.	Plan	Assessment
A.....	Albt.....	\$500	75.....	Albt.....	\$1500
B.....	".....	700	5.....	S. M. 63.....	1850
C.....	".....	1500	68.....	Albt.....	1500
D.....	".....	2000	69.....	".....	1800
102.....	".....	1000	70.....	".....	600
103.....	".....	1900	71.....	".....	600
33.....	".....	400	143.....	".....	2600
34.....	".....	500	144.....	".....	2200
35.....	".....	1000	146.....	".....	1100
36.....	".....	1000	147.....	".....	700
28.....	".....	2800	148.....	".....	700
29.....	".....	1300	149.....	".....	700
30.....	".....	700	150.....	".....	700
31.....	".....	1200	151.....	".....	1150
32.....	".....	700	152.....	".....	650
37.....	".....	2700	153.....	".....	650
1.....	".....	200	154.....	".....	700
2.....	".....	300	76.....	S. M. 28.....	100
3.....	".....	400	77.....	".....	100
4.....	".....	450	78.....	".....	100
5.....	".....	450	79.....	".....	100
6.....	".....	450	80.....	".....	100
7.....	".....	450	81.....	".....	100
8.....	".....	400	82.....	".....	100
9.....	".....	350	83.....	".....	100
64.....	".....	700	84.....	".....	100
65.....	".....	2250	71.....	".....	100
66.....	".....	600			
67.....	".....	500			\$48,100

Property owned by the O & M Power Company which is included in this statement..... \$17,100
 Other property..... 31,000
 Total..... \$48,100

1924 assessment of properties affected at 501 B. M. exclusive of Shevlin-Clarke properties and Pithers Point Park

Lot No.	Plan	Assessment	Lot No.	Plan	Assessment
A.....	Albt.....	\$500	31.....	S. M. 28.....	\$1200
B.....	".....	700	32.....	".....	700
C.....	".....	1500	37.....	".....	2700
D.....	".....	2000	1.....	".....	200
102.....	".....	1000	2.....	".....	300
103.....	".....	1900	3.....	".....	400
104.....	".....	7200	4.....	".....	450
33.....	".....	400	5.....	".....	450
34.....	".....	500	6.....	".....	450
35.....	".....	1000	7.....	".....	450
36.....	".....	1000	8.....	".....	400
39.....	".....	1300	9.....	".....	350
40.....	".....	700	63.....	".....	700
27.....	".....	2400	64.....	".....	700
28.....	".....	2800	65.....	".....	2250
29.....	".....	1300	66.....	".....	600
30.....	".....	700	67.....	".....	300

1924 assessment of properties affected at 501 B. M. exclusive of Shevlin-Clarke properties and Pithers Point Park—Continued

Lot No.	Plan	Assessment	Lot No.	Plan	Assessment
75	Albt	\$1500	160	Albt	\$500
3	S. M. 63	4550	161	"	750
4	"	550	162	"	700
5	"	1850	163	"	500
68	Albt	1500	164	"	500
69	"	1800	165	"	600
70	"	600	166	"	900
71	"	600	286	"	600
140	"	50	287	"	500
141	"	1100	64	S. M. 28	1000
142	"	1400	65	"	200
143	"	2600	72	"	100
144	"	2200	73	"	100
145	"	900	74	"	100
146	"	1100	75	"	100
147	"	700	76	"	100
148	"	700	77	"	100
149	"	700	78	"	100
150	"	700	79	"	100
151	"	1150	80	"	100
152	"	650	81	"	100
153	"	650	82	"	100
154	"	700	83	"	100
155	"	300	84	"	100
156	"	2400	71	"	100
157	"	500			
158	"	1000			\$85,600
159	"	500			

Property owned by the O & M Power Co. and included in this statement.....	\$21,450
Other property	64,150
Total.....	\$85,600

(Gus Hohn was called as a witness, and testified as follows:)

Mr. HURLBURT. Where do you live, Mr. Hohn?

Mr. HOHN. Ericksberg.

Mr. HURLBURT. What is your occupation?

Mr. HOHN. Farming.

Mr. HURLBURT. Near what body of water is your farm?

Mr. HOHN. Rat Root river.

Mr. HURLBURT. The Rat Root river flows into Black bay and Black bay is a tributary of Rainy river?

Mr. HOHN. Yes, sir.

Mr. HURLBURT. Will you state what effect the raising of the level of Rainy lake to the extent of three feet will have upon your farm?

Mr. HOHN. Three feet more in the raise of the water at the present time would not affect my farm down south of the town, but the property that I live on would be affected to a certain extent.

Mr. HURLBURT. Do you mean where your house is located?

Mr. HOHN. Where my house is located; yes.

Mr. HURLBURT. How would it affect your house?

Mr. HOHN. If the water were raised another foot it would come into my basement?

Mr. HURLBURT. Merely the raising of one more foot?

Mr. HOHN. Yes, sir; to say nothing about three feet.

Mr. HURLBURT. Would it affect the buildings in that neighborhood similarly?

Mr. HOHN. It would affect my buildings.

Mr. HURLBURT. Would it affect the public school building down there?

Mr. HOHN. Yes, sir; the same as it would affect my property because there is a full basement under the school with the same drainage, and the water used to come up to the bottom of the basement.

Mr. HURLBURT. Would an elevation of three feet have the effect of overflowing any portion of your land?

Mr. HOHN. A small portion, say, three to five acres.

Mr. HURLBURT. Is that land all under cultivation?

Mr. HOHN. No, sir; but it is valuable land.

Mr. HURLBURT. Can you estimate the damage to which you would be put by an elevation of three feet in the water of Rainy lake?

Mr. HOHN. It is hard to estimate the full value. The basement is worth as much as the building because that is the main part, where you have your furnace.

Mr. McCUMBER. It would really compel you to move your buildings farther up, would it not?

Mr. HOHN. No; I am at the highest point at the present time, and I could not better myself by moving.

(Charles Fredin was called as a witness and testified as follows:)

Mr. HURLBURT. Where do you live, Mr. Fredin?

Mr. FREDIN. Ericksberg.

Mr. HURLBURT. What is your occupation?

Mr. FREDIN. Farmer.

Mr. HURLBURT. How large a farm have you?

Mr. FREDIN. I have about sixty two acres.

Mr. HURLBURT. Where is your farm located?

Mr. FREDIN. On Rat Root river.

Mr. HURLBURT. What would be the effect on your farm if the water in Rainy lake were raised three feet.

Mr. FREDIN. It would ruin about five acres which would be overflowed.

Mr. HURLBURT. Are these five acres cultivated?

Mr. FREDIN. They are cultivated. I have a garden on some of it.

Mr. HURLBURT. Would it come anywhere near your house?

Mr. FREDIN. It might get into the cellar of the house.

Mr. BACKUS. How many acres have you under cultivation of this sixty-two acres you mention?

Mr. FREDIN. I have fifty-five acres under cultivation.

Mr. BACKUS. And four or five acres would be affected?

Mr. FREDIN. Yes; something like that.

(H. H. Hall was called as a witness and testified as follows:)

Mr. HURLBURT. What is your full name, Mr. Hall?

Mr. HALL. H. H. Hall.

Mr. HURLBURT. And you live in Ericksberg?

Mr. HALL. Yes, sir.

Mr. HURLBURT. Do you own property in Ericksberg?

Mr. HALL. Forty acres.

Mr. HURLBURT. On what water is your property located?

Mr. HALL. Rat Root river.

Mr. HURLBURT. What would be the effect upon your property of the raising of the level of Rainy lake three feet?

Mr. HALL. I bought forty acres there for the purpose of making a home. After spending the rest of my life in other business I reverted to the farm and I bought that piece of land for my home. The river is practically the north line of the whole extent of the forty. The rising of the water would cover pretty nearly half of it.

In order that this Commission may understand what this damage would be to us farmers along the Rat Root river they should go out and visit that district. We have one of the finest valleys on God's footstool, deep rich soil. You can raise there anything that will grow elsewhere. I should say with this raise in the river I would be about ready to move out.

Mr. CLARK. Did I understand you to say that the water would cover substantially half of your forty acres?

Mr. HALL. Yes, sir. It slopes down from this big highway to the river. The whole north line of the forty is low.

Mr. CLARK. And the raise in the water would catch your forty about half way up.

Mr. HALL. Yes.

Mr. CLARK. How about your neighbors? Is their land located substantially in the same manner?

Mr. HALL. Two of my neighbors. One of them particularly has been there some twenty-seven years. He has developed a fine farm there and erected fine buildings, and if this raise takes place he would be drowned out completely.

Mr. HURLBURT. What is his name?

Mr. HALL. George Watson.

Mr. CLARK. How much of your own forty is under cultivation at the present time?

Mr. HALL. Five acres.

Mr. CLARK. How much is susceptible of cultivation?

Mr. HALL. The whole forty acres except what the river takes up. The river is right on the north line.

Mr. CLARK. Is there anything else you desire to say, Mr. Hall?

Mr. HALL. I would like to emphasize what Mr. Hohn said. We have had a good deal of difficulty there in getting our public school building in proper shape for our children. Last year we secured the building of a basement and drainage into Rat Root river. If this raise takes place all that would be destroyed.

Mr. HURLBURT. What you have said in regard to the effect of this raise of water upon your land is generally true of all the farmers in this Rat Root valley, is it not?

Mr. HALL. Yes, sir; that is, contiguous to the river.

Mr. HURLBURT. How long is this valley?

Mr. HALL. The region that has fine farms is certainly about eight miles in extent along the river.

(Andrew Jespersen was called as a witness and testified as follows:)

Mr. HURLBURT. What is your business, Mr. Jespersen?

Mr. JESPERSEN. Farmer.

Mr. HURLBURT. Where is your farm located?

Mr. JESPERSEN. On Jack Fish bay.

Mr. HURLBURT. Where is Jack Fish bay with respect to Ranier?

Mr. JESPERSEN. Four miles east of Ranier.

Mr. HURLBURT. Jack Fish bay is an arm of Rainy lake?

Mr. JESPERSEN. Yes, sir.

Mr. HURLBURT. How large a farm have you there?

Mr. JESPERSEN. I have two hundred and eighty acres.

Mr. HURLBURT. How many acres have you under cultivation?

Mr. JESPERSEN. Forty acres.

Mr. HURLBURT. Does your farm border right on the lake, or does it extend back from the lake?

Mr. JESPERSEN. It is right on the lake.

Mr. HURLBURT. How large a frontage on the lake is there?

Mr. JESPERSEN. A little over a mile.

Mr. HURLBURT. What is the nature of the banks of the lake there? Are they high and precipitous or are they sloping?

Mr. JESPERSEN. They are very sloping.

Mr. HURLBURT. What would be the effect upon your farm of an increase in the level of Rainy lake of three feet?

Mr. JESPERSON. It would nearly destroy the whole farm. There would be probably about ten or twelve acres left.

Mr. HURLBURT. Out of a total acreage of two hundred and eighty?

Mr. JESPERSON. Yes, sir.

Mr. HURLBURT. Would this submerged portion be cultivated areas?

Mr. JESPERSON. Do you mean that which would be left?

Mr. HURLBURT. Yes.

Mr. JESPERSON. No; it would be two or three rock ridges.

Mr. HURLBURT. How many acres have you under cultivation?

Mr. JESPERSON. About forty.

Mr. HURLBURT. Would this entire forty be submerged?

Mr. JESPERSON. Every bit of it.

Mr. HURLBURT. What improvements have you on your farm?

Mr. JESPERSON. There are no very good improvements. There are buildings.

Mr. HURLBURT. You have a house and a barn?

Mr. JESPERSON. Yes; and I have a silo.

Mr. HURLBURT. What would be the effect of this water upon those buildings?

Mr. JESPERSON. They would all be under water.

Mr. HURLBURT. Have you made any estimate at any time as to what damage you would suffer by reason of raising the elevation of the lake to an extent of three feet?

Mr. JESPERSON. The value of it?

Mr. HURLBURT. yes.

Mr. JESPERSON. The only information I have as to value is that they are selling land about a half mile from me at \$50 an acre and some at \$70.

Mr. McCUMBER. You owned that land in 1916, did you?

Mr. JESPERSON. No, sir; I bought in in 1919.

Mr. McCUMBER. You had pretty high water in 1916 here?

Mr. JESPERSON. Yes, sir.

Mr. McCUMBER. Do you know what effect that had? Did that cover your farm?

Mr. JESPERSON. It covered a part of it, quite a bit of it. I could not answer that question very well because I was not there.

Mr. McCUMBER. But you think it covered most of it?

Mr. JESPERSON. I think it covered nearly all of it.

(Charles Mitshulis was called as a witness, and testified as follows:)

Mr. HURLBURT. Where do you live, Mr. Mitshulis?

Mr. MITSHULIS. I live at Ericksberg.

Mr. HURLBURT. Do you own land at Ericksberg?

Mr. MITSHULIS. I do, yes.

Mr. HURLBURT. Have you a farm in Ericksberg?

Mr. MITSHULIS. It is four miles below Ericksberg.

Mr. HURLBURT. Is it located on the Rat Root river?

Mr. MITSHULIS. It is three-quarters of a mile along the Rat Root river.

Mr. HURLBURT. How many acres are there?

Mr. MITSHULIS. One hundred and fifty five.

Mr. HURLBURT. How much of it is under cultivation?

Mr. MITSHULIS. I have no chance to cultivate. I have only five acres in cultivation. The rest of it is under water now.

Mr. HURLBURT. What would be the effect upon your farm if the water in Rainy lake were increased three feet in height?

Mr. MITSHULIS. I could see the top of a tree.

Mr. CLARK. How far up the tree does the water come now?

Mr. MITSHULIS. There is no timber there anyway; but there is brush, some about six or seven feet high. Probably you could see the top of some of them. I have a few pictures taken in 1918 and 1919 which show the condition on the farm. There is the same condition to-day.

Mr. BACKUS. Mr. Mitshulis; how much more damage would there be if the water were three feet deeper?

Mr. MITSHULIS. There cannot be any more. The five acres and the buildings would then go. They would have to lower this bank here six feet before I could use that land.

Mr. HURLBURT. Have you ever been paid any damages on account of the overflowing of the land at some previous time?

Mr. MITSHULIS. No; not a penny. Mr. Backus promised me to pay, but I have not got a penny yet.

Mr. CLARK. How long have you owned that farm?

Mr. MITSHULIS. I moved in in 1918.

Mr. CLARK. When was this dam here built?

Mr. MITSHULIS. I do not know.

Mr. BACKUS. Did you ever get a promise from me to pay? You say I promised to pay you.

Mr. MITSHULIS. Yes.

Mr. BACKUS. When?

Mr. MITSHULIS. I have the letters.

Mr. BACKUS. Have you got the letters with you?

Mr. MITSHULIS. Not from you but from the company.

Mr. BACKUS. I would like to see them no matter from whom they came.

(The witness here produced a letter and handed it to Mr. Backus.)

Mr. MAGRATH. Read it, Mr. Backus, please.

Mr. BACKUS. This is from the Department of Drainage and Waters of the State of Minnesota. It is not our letter. I deny any charge of that kind anywhere.

Mr. HURLBURT. This one (referring to another letter produced by witness) is signed by the Second Vice-President and dated August 30, 1918, and says: "Referring to yours of August 26th, I am writing our attorney in Minneapolis about the matter and as soon as I get a reply within the next week or so will communicate with you further."

Here is another addressed to Mr. Mitshulis at Ericksberg under date of August 8th, 1919, reading: "Referring to your letter of July 12, I find you complained of an alleged overflowing on July 2nd, 1918, and again on October 29, 1918. On both of these dates the water in the lake instead of being high was less than normally high. It must be, therefore, self-evident that your troubles were not caused by high water, and if your land was flooded on these dates it must be below normal level. There is, therefore, no just basis for your claim in your letter of July 12."

Here is another letter, dated September 7, 1918, from the Second Vice-President, addressed to Mr. Mitshulis, reading: "Referring to the exchange of correspondence with reference to claim which you allege against us on account of supposed flowage, etc., we are having this matter investigated, and I will let you know within the next few days just what reply we can make you. You, of course, understand that we here have no knowledge of the fact and are, therefore, compelled to wait reports of our field men. You will hear from me further, however, as soon as possible."

Apparently it is an undetermined matter so far.

(Magnus Erickson was called as a witness, and testified as follows:)

Mr. HURLBURT. Where do you live, Mr. Erickson?

Mr. ERICKSON. At Ericksberg.

Mr. HURLBURT. What is your occupation?

Mr. ERICKSON. Farming.

Mr. HURLBURT. Where is your farm located?

Mr. ERICKSON. In section 8.

Mr. HURLBURT. Where is it located with respect to Rat Root river?

Mr. ERICKSON. I should judge it is about at the nearest point, the northeast corner, on the main channel, about eighty rods.

Mr. HURLBURT. How many acres have you under cultivation there?

Mr. ERICKSON. I have six acres under cultivation.

Mr. HURLBURT. What would be the effect upon your farm of an increase in the level of Rainy lake to the extent of three feet?

Mr. ERICKSON. It would be all flooded.

Mr. HURLBURT. It would flood the entire cultivated area?

Mr. ERICKSON. Yes; it would cover the whole forty.

Mr. HURLBURT. Would about the same effect prevail with respect to other land located along there?

Mr. ERICKSON. The same thing, yes, sir.

Mr. HURLBURT. That is, your neighbors' land would be flooded in about the same way, would it?

Mr. ERICKSON. Yes, sir.

Mr. HURLBURT. Are you raising crops on this six acres that you have under cultivation?

Mr. ERICKSON. I have been cropping it for the last eight or ten years.

Mr. CLARK. Mr. Erickson, how much above the present ordinary stage of water does your land lie? You say it is about eighty rods away from the water.

Mr. ERICKSON. It is pretty level with the river. A few years ago—I forget the year—the water flooded my farm. It was all under water.

Mr. CLARK. What is the nature of the land? Is it open land?

Mr. ERICKSON. No; it is not open land. It has to be cleared. It is timbered land, tamarack.

Mr. McCUMBER. Practically all of that land lies about three feet above the present water level?

Mr. ERICKSON. It is that above the high water at the present time.

Mr. BACKUS. How high is it above the present stage of water?

Mr. ERICKSON. I do not think the land is over six inches above the water level now.

Mr. BACKUS. Then, if the water were raised three quarters of a foot it would overflow it now?

Mr. ERICKSON. A part of it would be overflowed.

Mr. BACKUS. That would be at the 497 level.

Mr. CLARK. How much of this land have you cleared already?

Mr. ERICKSON. Six acres.

Mr. CLARK. And that is the amount that you have under cultivation?

Mr. ERICKSON. It is a gambling proposition to clear any more. The first thing I know it will be all covered.

Mr. MAGRATH. Are you making any claims for damages owing to the present level?

Mr. ERICKSON. Yes, Mr. Magrath; I have a claim pending.

Mr. CLARK. How long have you been there?

Mr. ERICKSON. Eighteen years.

Mr. McCUMBER. And during that time you have cultivated only six acres?

Mr. ERICKSON. Well, I am running a store also. A few years ago there was half of it under water, so I stopped clearing.

Mr. McCUMBER. It is rather dangerous to cultivate much of it at any time is it not?

Mr. ERICKSON. Yes; it is just a waste of money. It is good soil, the best of soil, but you run only until you are overflowed and then you have nothing.

Mr. HURLBURT. I would like to refer briefly to a series of affidavits that have been made out by property owners on the south shore of Rainy lake. There were many inquiries and for the purpose of facilitating the gathering of this data I prepared a form of affidavit. It recites the name of the affiant, the legal description of the property owned, the valuation of the land and the improvements, a statement as to the effect upon the land of raising the water in Rainy lake to bench mark 499.5, and also an estimate as to the damage both to the land and to the improvements. These for the most part were made out in my office. I asked these questions and these people gave the answers. I have seventy two of them, and the total damages as shown by these affidavits amount to \$258,000.

Mr. MAGRATH. To require a new level of three feet additional?

Mr. HURLBURT. The question is this: "Affiant states that by raising the level of Rainy lake to 499.5 bench mark affiant's property would be affected as follows."

Mr. CLARK. How many of these have you?

Mr. HURLBURT. I have seventy-two.

Mr. CLARK. What is the total valuation that you fix as the damage?

Mr. HURLBURT. The total estimated damage is \$258,870. I have those all summarized and will leave this summary with you if you desire it. These affidavits are signed and sworn to before a person authorized to administer oaths.

Mr. CLARK. That makes an average of how much per affiant?

Mr. HURLBURT. I have not figured that out.

Mr. BACKUS. How much does it average per acre, Mr. Hurlburt?

Mr. HURLBURT. I have not figured that, Mr. Backus.

Mr. CLARK. A little over \$3,700 per affiant, is it not?

Mr. HURLBURT. Approximately that.

Mr. MAGRATH. We will be able to obtain details from this statement later on.

Mr. HURLBURT. Yes, sir. These seventy-two affiants are merely a small number as compared with the total number of property owners. I have written from memory here twenty-two persons from whom I have no affidavits, and Dr. Dunsmoor gave me the names of thirty-one nonresident persons from whom we have no

affidavit, but their property holdings are not very large, possibly an island here or an island there. There are some eight property owners from whom there are no affidavits and whose holdings are rather extensive. I would estimate that this statement of \$258,000 is probably not one-half of the damage that would be sustained by the riparian owners on the southern shore of Rainy lake. The southern shore of Rainy lake is about one-tenth of the total shores of all of these lakes concerned in this record. So if you use \$250,000, double that, making \$500,000, the total damage on the southern shore, and you use \$500,000 as the multiplicand and ten as the multiplier, you arrive at a figure that is of quite a respectable size, namely, \$5,000,000.

These people who have made out these affidavits and who have testified here today are not prepared to hire engineers and hydrographers to take levels and run contour lines. They must depend for the preservation of their property rights upon the gentlemen of the International Joint Commission.

Mr. DUBOIS. I suppose in most cases those who make these affidavits have their homes there?

Mr. HURLBURT. In some instances they are people who are in business in town and who live in cottages at the lake during the summer time. Some of the land is vacant property.

Mr. DUBOIS. Some of it is resort land?

Mr. HURLBURT. Some of it is summer resort land, not all of it. Some of it is timber land. Some of it is cutover land.

Mr. BACKUS. You think your idea is conservative?

Mr. HURLBURT. I think so. This valuation does not take into consideration the potential value of these lands with respect to their scenic and resort attractions which features have been dwelt upon quite at length before the Commission by the Arrowhead Association, the Izaak Walton League and other associations.

STATEMENT BY MR. CHARLES E. ELMQUIST

Mr. ELMQUIST. The Shevlin-Clarke Company has a large saw mill and planing mill located across the river at Fort Frances. That is a low piece of land. Considerable of the structures and the land upon which lumber is laid is upon an elevation of land which will be completely flooded if this lake is raised three feet as is now proposed. Considerable evidence supporting this statement was introduced in the original Rainy lake hearing. We desire not to present evidence at this time, but merely to call attention to the physical condition that now exists and to the fact that our company is absolutely opposed to the increase in the water levels of this lake. We have a large investment and a large property which we want to be

left unimpaired while we operate it. During the progress of the investigation which you will make through your engineers, we will undertake to communicate to those engineers the actual facts with respect to our property so that they may understand just what the facts are, what the damages would be due to the increase of the water level as proposed and what sort of improvements would have to be made to protect that property.

With respect to the Virginia and Rainy Lake Company I have to say that that company has large property holdings along Namakan lake, Kabetogama lake and other lakes on the Canadian boundary. Through the operation of the Kettle falls dam it has been very injuriously affected. Sometimes the water has been drawn off below the normal water level, sometimes below the natural low water mark in a state of nature. It left the logs high and dry for a period of as much as two years. At times they have been affected by the high water so that the constant fluctuations in the water level have interfered with its operation. Should it appear that the water levels are to be further increased, the property will be even more injuriously affected. We intend, of course, to present evidence in support of that statement at a later hearing before this Commission. At Cloquet the Weyerhaeuser interests have very large interests in northern Minnesota. As you progress with this investigation you may find it convenient to recommend that there be levels raised on waters that will affect our property there. Just what that may be we can not now say. But when your engineers have completed their studies and made a preliminary report, we will then be able to determine how our property will be affected. We are here simply serving notice that in the progress of this investigation we will make a complete and detailed presentation of the effect which these increased water levels will have upon our property.

Mr. CLARK. I am sure that will be very helpful to the Commission.

Sir WILLIAM HEARST. Mr. Backus, in the estimates that you gave us for the cost of the improvements at the different lakes, did you make any estimate of the cost of removing the trees and clearing the land that would be flooded?

Mr. BACKUS. No.

Sir WILLIAM HEARST. There is nothing for that?

Mr. BACKUS. We assumed that the merchantable timber would take care of itself in that respect.

Sir WILLIAM HEARST. Did you assume that the merchantable timber would be of sufficient value to compensate for clearing the land?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. Did you give any close consideration to that?

Mr. BACKUS. I will answer that, no; but generally speaking that is the way it works out.

Sir WILLIAM HEARST. Would you like to say now what the cost per acre would be of cutting close the flooded timber on all the flooded area and the brush and débris so as to make the place look as sightly and as nearly like normal as you could?

Mr. BACKUS. I think the cost would be nominal. That is, if you take the salvage value and deduct it from the total cost the cost would be nominal.

Sir WILLIAM HEARST. Leaving out the salvage value, what do you think the cost would be?

Mr. BACKUS. It would be very small.

Sir WILLIAM HEARST. You have heard statements as to its costing from \$5 to \$50 an acre.

Mr. BACKUS. There is a great deal that would not require a particle of expense where all the bald shores are.

Sir WILLIAM HEARST. I know where timber is flooded it is a pretty expensive thing to clear it out.

Mr. BACKUS. You will find on investigation a comparatively small amount of timber, what we call timber land, will be flooded.

Sir WILLIAM HEARST. In the cost of the dams, what kind of dams did you have in mind? Would they be concrete dams?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. All of them?

Mr. BACKUS. Yes.

Sir WILLIAM HEARST. You have in mind, though, in your estimate, simply dams for storage purposes, not power.

Mr. BACKUS. Yes. The power development would have to bear any additional expense.

Sir WILLIAM HEARST. There is one point I am not clear on from the evidence, but I want you to be good enough to tell me. Are any waters affected other than boundary waters? That is, will these dams back up into lakes and rivers that are not boundary waters, do you know?

Mr. BACKUS. Generally speaking, no. There may be some small streams that the water will back up a little at the mouths of the streams.

Sir WILLIAM HEARST. But your belief is that these developements will not affect anything but boundary waters.

Mr. BACKUS. That is the idea.

Mr. POWELL. What is the average cost of concrete work here per cubic yard?

Mr. BACKUS. I could not give you that offhand, but I should say all the way from \$9 to \$15 a cubic yard, depending on how accessible the site is, to get the material in and out.

Mr. BERKMAN. Mr. Backus, the other day you made a statement as to the cost of some developments in Quebec on the St. Maurice river. I think you stated a cost of \$25,000 per 100 cubic feet per second. Do you know what the resulting cost per horse power was, about?

Mr. BACKUS. I am not sure whether we figured that out or not. I cannot answer that.

Mr. BERKMAN. If we take recess now, do you think you could have those items after lunch?

Mr. BACKUS. The statements filed contain all the figures we made up, and I have not them with me now. Mr. Birkland took back with him the original information we received from Quebec, so I am afraid I cannot give you any more information on that than has been filed with the Commission.

Mr. BERKMAN. At a later time that information could be supplied by your people to the Commission?

Mr. BACKUS. Yes.

Mr. BERKMAN. On the property you mentioned in your statement?

Mr. BACKUS. Yes.

(The Commission took recess until 2 p. m.)

AFTER RECESS

The Commission reconvened at 2 p. m.

Mr. CLARK. It is quite necessary that some members of the Commission make an early departure this afternoon. Therefore I will ask those who have matters to bring before the Commission to be as concise as they consistently can. If it should happen that some members of the Commission are compelled to leave before the close of the session, then you will have to take the balance of the Commission. The record will be made up complete.

STATEMENT OF MR. A. J. MURRAY

Mr. MURRAY. I desire first to make a statement on behalf of Russell Bros., Limited, of Fort Frances. Russell Bros. are machinists, manufacturers of gasoline engines and wharfage tugs. They have established a machine shop on Front street a little east of the Shevlin-Clarke properties. They have perhaps the misfortune of being located on land of the lowest elevation between Front street and the paper mill on the banks of the Rainy river. Their property has a frontage of about 300 feet including a residence that is erected on one of the lots, by a depth of about 165 feet. They have in addition to their machine shop with its equipment, what they call a

marine railway or tramway to assist in taking boats and tugs from the river to their shop for the purpose of repair and also for launching boats which they have constructed. The proposed raise to bench mark 500 would submerge their premises to the extent of from 18 inches to 2 feet.

Mr. CLARK. Entirely?

Mr. MURRAY. Entirely with the exception possibly of the rear portion of the lot occupied by the residence. In 1916 their property was entirely submerged. I may say at this juncture that I am not presenting evidence at this time but will reserve, with your permission, the right to do so at a later stage. Photographs were taken at that time of the flood conditions and these photographs will be filed with the Commission. Since that time a dyke, of which you have heard, has been built along the water front. That dyke, while it would prevent any damage from a wash of the water or the force of the current, will not prevent the flooding of the premises through the seepage of the water through the dyke. The dyke is constructed of the ordinary ballast material, largely gravel and porous soil, so that the result, if the application is granted would be that the Russell Bros. property would be entirely useless for the purpose for which it is now being used.

Sir WILLIAM HEARST. What effect would the proposed storm sewer have?

Mr. MURRAY. With an elevation of 500, it is very difficult to see what effect that storm sewer would have. The property will be absolutely below the level of bench mark 500. The storm sewer proposed—I may say I was acting for the town at the time and I drew the agreements between Mr. Backus and the corporation—was intended to take care of the seepage water at the present elevation of 497. As Mr. Backus states, it has never been constructed. At the present level, that is 496.4 or 496.5 conditions at the Russell Bros. shop are not any too favorable. We are not suffering to any extent at present, but any increase of elevation will cause them very serious inconvenience. In fact, all that can be said in respect of any statement made by the Shevlin-Clarke Company would apply more cogently to Russell Bros. because the elevation of the Russell Bros. property is somewhat lower than that of the Shevlin-Clarke premises.

Mr. CLARK. When your plant was constructed at that point, how was it with reference to the then level?

Mr. MURRAY. The construction of the Russell Bros. plant was made prior to the erection of the dam, so I am informed.

Mr. CLARK. What, if any, elevation above the water as it then was?

Mr. MURRAY. They inform me it was eight or nine feet above the river as it was at the mean level in the state of nature. I think their machine shop was built somewhere about 1905 or 1906, some years before I came to this country. I am personally interested in Russell Bros. I am a director of the concern. I only say so in order to convey to the Commission that I have perhaps somewhat intimate knowledge of conditions there. The firm of Russell Bros. was incorporated last winter, and they have developed a very considerable business in the manufacture of wharfing tugs. With the Commission's permission, later on when we understand better what Mr. Backus proposes in the way of protective works we will endeavor to present evidence and make a further statement.

Secondly, in reference to property owners east or north of Pithers Point, I represent several owners of cottages there. This property fronts on Rainy lake. It formerly belonged to the Indian department and has been subdivided and sold by the Indian department to residents of Fort Frances for the erection of summer homes. I refer to the property of Dr. Reeves, a physician, and property belonging to Henry Nelson. All that property, and the area is very considerable, consists of some forty or fifty acres, I understand, all of which is well wooded. It is all about the same level as that at Pithers Point and would be absolutely submerged by the proposed elevation to 500 bench mark. Many cottages have been erected on that area. I understand some of the owners are here to-day and will probably ask to be heard. From my general knowledge and observation, the cottages range from a value of \$3,000 to \$6,000 or \$7,000 and all of them are practically new. That construction has taken place in the last three or four years. That property would be absolutely destroyed for the purposes for which it is being used, and I can hardly see how any protective work there would ameliorate the general damage.

Mr. McCUMBER. Are these summer homes?

Mr. MURRAY. They are just summer homes. They are not occupied in winter. They are within three miles of the center of the town. Most of the owners have cars and as soon as spring opens, they occupy these cottages and go to and from business in their cars.

Mr. McCUMBER. They are only three feet or less from the present water mark.

Mr. MURRAY. I do not know exactly. I would think not more than 14 or 15 inches above the present level.

Mr. POWELL. Have you any suggestions in the way of precautionary or remedial measures?

Mr. MURRAY. It seems to me it would be very difficult to protect that area because the result would be that while the protecting

embankments might protect the immediate shore, it would leave the property below the level of the 500 bench mark so that there would have to be some very extraordinary precautions taken to prevent seepage.

Mr. McCUMBER. Were the lands inundated in the 1916 freshet?

Mr. MURRAY. That land was all soaked in 1916.

Mr. McCUMBER. The reason I asked that is that I can scarcely understand why people would take the chance just so soon after 1916 in building on lands that had been inundated by an extraordinary freshet.

Mr. MURRAY. The flood of 1916 was a very extraordinary freshet. There is no doubt about that. But an inundation for a few days would not be anything like so serious as a permanent soaking.

Mr. POWELL. A gentleman on our side who was up here one time took a spade and sank a little hole and showed that the ground was porous. The seepage is on account of that.

Mr. MURRAY. The ground is exceedingly porous. It is the result of silting up from the lake.

Mr. POWELL. Supposing a dyke were built and had a core of concrete to stop the seepage, what then?

Mr. MURRAY. If that could be done, if the foundation could be carried low enough to some clay subsoil or rock, I presume, although I am not an engineer by any means, that seepage might be prevented at that point at least.

Mr. POWELL. But you have no such provision in any of your dykes so far?

Mr. MURRAY. None whatever.

Mr. POWELL. Who built the dyke you have?

Mr. MURRAY. Mr. Backus' company built the dyke about 1917. In reference to islands, I am supposed to represent the Canadian interests, cottagers on the north side of Rainy lake. There are very many more islands on the north side of the lake, that is in the Canadian portion of Rainy lake than there are on the south side because of the fact there is the north arm about which you have probably had some information. That north arm is just above the same area as the southerly arm and it is all Canadian and there are about as many islands up that way as there are in the southern arm. No survey has been made to estimate damages that may accrue to the various property owners, and I also request the indulgence of the Commission in submitting evidence at a later date, if necessary, to show damages to particular islands. But speaking generally, I have to re-echo all that has been said concerning the destruction of the scenic beauty of the lake, all that has been urged so eloquently by Mr. Oberholtzer and others. I personally own an island and have had

a cottage erected on it for many years which would be absolutely destroyed. I would not want to use it if the level of the lake were raised to 500 bench mark.

Mr. McCUMBER. That is a cottage on one of the islands?

Mr. MURRAY. Yes, in the neighborhood of Dr. Dunsmoor's property. Many of the beaches would be destroyed and there would be the destruction of the timber along the shore line; the loss to the community in scenic beauty and the loss to the town and community in tourist traffic would be simply incalculable. We feel that after a time the timber interests and even the pulp and paper interests may be a thing of the past in the northern country in Rainy lake and its vicinity. The timber will not last forever. The saw mills will not last forever. They are a fleeting industry and Mr. Backus' enterprise will probably be centered at some date on some other falls of the country. But we wish the scenic beauty to remain.

Mr. McCUMBER. You think the tourist traffic will continue forever?

Mr. MURRAY. It will increase as the population of this northern country increases.

STATEMENT OF MR. M. A. MALONEY

Mr. MALONEY. I have for the last twenty years been an employee of the Shevlin-Clarke Company. For the last fifteen years I have resided in Fort Frances and have occupied various positions of more or less importance with the Shevlin-Clarke Company. To-day, I am its general manager. The position of our company was sufficiently outlined by our attorney, Mr. Elmquist. We are absolutely opposed to any raising of the levels of Rainy lake or the other waters. But my remarks to-day are confined to my interests as a property owner at Pithers Point. Pithers Point, as Mr. Murray explained to you, consists of 26 lots that were sold in the last five or six years by the Indian department. They have a frontage of 99 feet each on Rainy lake and extend back about 450 feet giving an area of about one acre. They were sold at public auction and readily snapped up.

Some three or four years ago I built a house there, 20 x 36, a story and a half high with a lean-to or kitchen 12 x 16 and a garage at the rear. The property is valuable to the same extent that Pithers Point park is and the general character is very much the same. It had last year one of the most beautiful beaches imaginable. This year, due to the high water, the beaches were flooded out, but of that I have no cause to complain because it is not above the 497 mark. At present the beach facilities afforded to my children are admirable

and I have no cause to complain. If the water is raised to a point approximately three feet higher than it is now, I figure my summer home is of no value to me at all. While I am not speaking for the other lot holders, what I say practically applies to them too. I figure this property is unique in that its location cannot be duplicated. Pithers Point park occupies all the frontage on Rainy lake south immediately across from Ranier. Just north of this property are these 26 lots in question. Beyond those 26 lots is the Indian school and beyond that the Border Lumber Company and so on. There are no residential sites available outside of those 26 lots. These lots are also particularly valuable in that, for instance, my summer residence is practically as close to my office as my house down town. It has all the advantages of a summer home with the exception of sewage facilities that my house down town has. We have electric light and we use electricity for cooking. We have a telephone. We have by reason of septic tanks and so on a medium of sewage disposal. I am able to go by automobile just the same as from my house down town. For myself, I would feel very keenly being obliged to sacrifice this little investment I have up there. This home has afforded many opportunities, as Dr. Dunsmoor put it, for health, pleasure and recreation, and the ability to take my children there in the summer and keep them off the street. In addition to that it has given opportunities for affording pleasure to many of my friends. While I would likely be reimbursed from a financial standpoint, you cannot give me another situation like it on Rainy lake to-day.

Mr. CLARK. Mr. George, we would be glad to hear from you now.

STATEMENT OF MR. A. D. GEORGE

Mr. GEORGE. Mr. Chairman, as I intimated yesterday morning, I represent J. A. Mathieu, Ltd., the Border Lumber Company, Ltd., and the Mine Center Lumber Company, Ltd., the last two named companies being incorporated under the laws of the Province of Ontario.

The Border Lumber Company, Ltd., the J. A. Mathieu, Ltd., and the Mine Center Lumber Company, Ltd., all together control certain timberlands situated on Rainy lake, Lac LaCroix, Namakan lake and Namakan river, which are the waters in which this Commission is immediately interested. These timber limits comprise in all 413 square miles and there is a water frontage on these particular limits of approximately 200 miles.

The J. A. Mathieu, Ltd., controls the other two companies, and J. A. Mathieu controls the J. A. Mathieu, Ltd., so I will refer to them as the J. A. Mathieu interests.

Mr. CLARK. When you speak of the water frontage for that distance, that includes the inlets?

Mr. GEORGE. The inlets and bays and peninsulas.

As to what damage will be done to the timber on these limits by reason of the water being raised to a 500 foot level, we are not in a position at the present time to say, as we have no knowledge on the subject. Until the surveys are made, until the contour lines are run, we will not be able to say what damage will be done to those timber limits. Therefore, gentlemen, I simply in behalf of my clients reserve the right to submit evidence at some future hearing as to the damage to the timber limits.

In respect to logging operations, Mr. Mathieu owns limits on Lac LaCroix. It is suggested that the level of Lac LaCroix be raised. Aside from any damage to the timber limits, I understand that at the northern outlet of Lac LaCroix, at Namakan river, there are to be built certain works which will necessitate a diversion of the waters of the Namakan river down to Little Vermilion. My clients are not particularly interested in the diversion of water, but they are interested in obtaining sufficient water through Namakan river so as to drive logs cut on Lac LaCroix safely down through Namakan river to Namakan lake, and if the Commission recommends that Lac LaCroix be raised, we would ask that such measures be taken as to insure to the J. A. Mathieu interests sufficient water through Namakan river to enable them to safely drive their logs from the limits on Lac LaCroix.

Mr. POWELL. What is the length of the Namakan river through which they would have to drive the logs?

Mr. GEORGE. If I had a map here I could tell you.

Mr. POWELL. Do not bother about it. I thought you had that information at hand.

Mr. GEORGE. I am informed that it is approximately fifty miles.

Mr. POWELL. Would a provision to use the dam that is put in as a driving dam meet the situation?

Mr. GEORGE. Yes; provided there is such regulation as would insure to my clients the proper operation during the time that we require the water.

Mr. POWELL. That is an important point.

Mr. GEORGE. Yes. If the water is required by power interests at the same time it is required by the operating companies in the timber limits, then we would ask to be given the preference, because we cannot operate these limits and our mills on Lac LaCroix unless that provision is assured to us so that our driving operations will not be impeded by any other interests.

Mr. POWELL. That is in harmony with the treaties which place navigation interests first of all.

Mr. GEORGE. A plan has been prepared of the J. A. Mathieu mills on Rainy lake. These mills are situated a distance of probably four miles from this courthouse where these hearings are now being held. They are on Indian reserve 18-B, which is under the control of the Indian department of Canada. The surveyor prepared this plan only within the last few days. The contour lines were run last week. These contour lines from this plan will show what damage will be done to the operating mill of my clients if the water is raised to the 500 foot level or the 501 foot level, and it also shows the conditions at 499 and 498. You can see the lines here on the plan. Here is the sawmill [indicating].

Mr. CLARK. Which is the present level?

Mr. GEORGE. This is the shore line here [indicating]. You will notice if you raise to the 500 bench mark you just take that line next to the top and follow it around and see there is a complete inundation of the mill proper. The boilers will be under water, the engines will be under water, and one-third of the holdings of my clients will be submerged. It will be practically impossible to operate those mills at the 500 foot level.

Mr. MAGRATH. Are you filing that plan with the Commission?

Mr. GEORGE. Yes.

Mr. MAGRATH. Do you have two copies?

Mr. GEORGE. I will see that you get copies this afternoon.

That is as brief a statement as I can make. I understand the Commissioners want only a very precise statement. I can furnish at a future date exactly what our damages to that mill property will be, but the difficulty is to provide another site for my clients if the water is raised to the 500 foot level. There is no other site available on Rainy lake that has the value of that site.

Sir WILLIAM HEARST. Could the land be filled in and your mill raised?

Mr. GEORGE. That has been considered by my clients, and it is possible to do that. I do not know exactly where they would get the material with which to do it. There is a very rocky formation there and we are occupying about all the earth around there. It is possible to do that, but it will be very expensive work.

Mr. BACKUS. Mr. George, will you furnish us a copy of that blueprint?

Mr. GEORGE. Yes; Mr. Backus, I will do so.

(The blueprint referred to is marked "Exhibit A", and will be found in the files of the Commission.)

Sir WILLIAM HEARST. I would suggest that you give us a brief of the damages you referred to. You will not be held by that if you want to supplement it later on.

Mr. GEORGE. I could go into that subject matter now, Sir William, but on account of the position that the Commission has taken I thought I would defer it until a later date.

STATEMENT OF MR. GEORGE H. LOMMEN

Mr. LOMMEN. Mr. Chairman, I desire at this time to address to the Commission and to have included upon the record a technical objection to the jurisdictional feature of this proceeding, and I desire just as briefly as possible to submit to the Commission the fact that, proceeding under and by virtue of the fifth article of the Constitution of the United States relating to eminent domain and having in mind the plan of the applicant here and the testimony so far included upon the record, it is evident that the purpose here in mind is purely and entirely a private enterprise. And I want to call to the attention of the Commission the constitutional rights of the parties protesting the establishment of any change, asserting for themselves the right to have their property not divested from them for private enterprises.

I respectfully submit to you one or two of the high lights of the United States cases touching upon that point, assuming, of course, that we agree that this Commission is in existence and empowered to carry out the rights of eminent domain which the federal government has defined by our United States courts and the constitutional provisions.

In view of the testimony and the application now before the Commission, we hold that the United States government has not in itself nor through this officially constituted Commission here sitting the right to change the water stages which in effect will constitute the taking of property for private use.

Mr. POWELL. Pardon me. Probably you are aware that we are not sitting in a judicial capacity and make no order that governs anybody. This is purely an inquisitorial proceeding which we are directed to take by the two governments, and it does not make a bit of difference what we inquire into; we are perfectly justified in preparing our order and then after that you may protest against that order.

Mr. LOMMEN. It is merely for the purpose of protecting our rights and perfecting the record.

Mr. POWELL. We cannot attack your rights.

Mr. LOMMEN. Because of the vagueness of the plan or the general result of what this hearing will bring to pass, we can only con-

template that it will mean the flowing over of certain lands which, according to the United States cases, is a taking of property, and we assert that the use of that overflowed land is in all respects for private industry, and according to the line of well settled cases in the United States courts that is not proper.

I merely want to assert this fact and have it placed upon the record. I recognize that the time to determine the question of constitutional rights is for the courts, but having in mind that if this matter in its final analysis is to jeopardize the constitutional rights of parties, the Commission should have it in mind at this time before the two governments impose upon them the impending cost of the survey. That is all, unless the Commission desires citations of cases which I will call later on.

While I have the floor I beg leave at this time to file in behalf of certain organizations some additional protests and petitions, namely, one arising out of a public mass meeting held at Virginia, Minn., in the month of August, signed by representative citizens, and sent by their respective communities in northern Minnesota and in other parts of the United States, protesting against any change whatsoever in the water levels. I have here a resolution by the Izaak Walton League of Virginia, Minn., a resolution from the Virginia Rotary Club of Virginia, Minn., and a resolution from the members of the Eveleth, Minn., Lions Club protesting against any change whatsoever in the water levels. These petitions contain the names of over three hundred parties.

(The petition and resolutions above referred to will be found in the files of the Commission.)

In closing I desire to say in behalf of these people who have presented these petitions that they desire this fact to be kept in mind by the Commission: That if a change in water elevations is determined expedient the Commission give consideration to the speculative value of our country from a recreational standpoint and not simply a dollar and cent value that may be placed upon the land, having in mind the fact that in northeastern Minnesota there is the Arrowhead Association which each year is spending \$50,000 of its own money to attract to this country men of vision and capital, having in mind the same development that Flagler had when he went upon the sand dunes of Florida and established a metropolis; also the fact that we are spending large sums of money this year not to attract the passing motorists and tourists but to attract men with capital who will make out of this country greater industrial establishments and bring to it greater developments than the power interests.

STATEMENT OF MR. E. W. BACKUS

Mr. BACKUS. Gentlemen, I would like to be permitted to file with the secretaries of the Commission a little later, as soon as we can prepare them, the gauge readings from both the works here and at Kettle falls, which will enable you to form your own conclusions as to what the operations have been like in the past. We have records of those levels ever since the works were constructed, and I think that will be of very much service to the engineers.

Inasmuch as there are several new members on this Commission who are not familiar with this particular situation, I want to spend just a few moments in reviewing the history of this development from the very start.

It was thirty-one years ago last May that the construction of what is now the Minnesota & International Railway was started from Brainerd north to the boundary. Thirty-one years ago I rode down from Leech lake on the first carload of logs. I was instrumental in getting together the organization which built and operated the road, and from that day to this I have always maintained a thirty percent interest in the property, so I have been very constantly interested from that time to this.

That was in 1894. Shortly after that some of my friends who were interested in the old town site at International Falls got into trouble and their property was foreclosed, and without seeing the property I furnished the money to prevent the passing of the title on the last day, and a little later, when the spot where we stand was 200 miles from the nearest railroad, Winnipeg on the northwest, Port Arthur on the east, Duluth on the southeast and Brainerd on the southwest, I came up here and landed one night about one-thirty in the morning at Fort Frances, where there was a Hudson Bay post. I say that so you will realize that the proposition and the contentions I am making are a little different from the ordinary contention of this kind where the country has all grown up together.

When I started that railroad from Brainerd north the country on the north divide, or for the last seventy-five miles south from here, was almost entirely uninhabited. Fort Frances at that time had been having a little boom on account of the gold craze. There had been a few shacks built on the shores around the Rainy lake and three or four shacks in International Falls, what was then known as Koochiching. We kept negotiating from that time until 1900 with the Canadian Government for the rights on the Canadian side to develop this property, and I carried on the plans of building what is now the Minnesota & International Railway—it was then the Brainerd & Northern Minnesota Railway—and in 1900 we had surveys made of this lake and the surrounding country, had our plans

all prepared, and those plans from that day to this have always shown a 500 foot level on Rainy lake. Those plans have always been available to every prospective settler in this country and to every interest.

When there was a prospect of a road being built by the McKenzie-Mann interests I had conference with them, and at that time they had purchased the Gunflint road out of Port Arthur and they told me that they were planing to extend Gunflint south to Net lake and thence westward and northwestward through Warroad into Winnipeg.

From the very start the plans were always on the table with the dam built at 497 and provided with three feet of flash board to carry the height up on Rainy lake to 500. That means about 499.5 on the Rainy river below Pithers Point. I say that because I think this is a different situation than is usually confronting this Commission.

Every interest, the sawmill interest, the railroad interest, all hands knew what was stated by the engineers to be the practical level at which to hold Rainy lake. I want you to consider that fact, and when I see protestants coming before this Commission who have purchased property and built houses even up to within a year of the present time, without inquiring at what point they would be safe in building, I think it is unfair that they should be seriously considered in adjusting the question of whether we can establish our level at 500 or 499 or 497.

I do not want to take too much time of the Commission because I know some of the members want to get away, but I want that particular point to be taken into consideration. If we had come into this enterprise after the country had been settled up that would have been another consideration. Now, I do not criticize. I think Mr. Pratt made a very fair statement as to the state's position, but I want to say to you gentlemen that before we had proceeded beyond Bemidji with our survey I went to the State Auditor's office and there met Mr. Iverson and said: "We have the surveys made on Rainy lake; we know what the effect is going to be of a 500 foot level; can we get a bill through the legislature, or how had we better proceed?" He agreed with me that the land was of very little value, that we should go ahead, and that the damage would be nominal, instead of asking for a concession which would be objected to.

All the private owners of lands that are appearing before you today could have obtained all of the information that we are giving you by simply coming to our office and asking for it. For instance, I went to the Ryan Hotel and saw Mr. McKenzie as soon as we had our plans prepared and said to him: "I hope you will take the level

of Rainy lake into consideration in deciding the level of your railroad." I do not need go any further into detail on that.

When Mr. Shevlin started to build his mill at Fort Frances I called him on the telephone and told him that the level of Rainy lake was proposed for 500, and my recommendation was to build the lowest elevation of his floors at 504. I did not stop there. I went into Mr. W. A. Wilkins' office, who was his engineer and architect, and gave him the same information. Every one had notice of what we proposed to do. I want that for whatever it is worth to be taken into consideration.

Now let me say this, that if you find that Rainy lake ought not to be established at the 500 foot level, then it becomes all the more necessary to create the storage reservoirs larger on the international boundary lakes above, because it is not safe to operate this watershed as it has been operated in the past. The higher you raise Rainy lake the less you need storage above. I do not think it is going to be possible to raise Namakan lake materially.

I want to say this further, as the thought has occurred to me while we have been in session here today; it is not as though these works were not established at International Falls; the only thing we have got to do to raise the lake level to 500 is to put in the stanchions where openings have been made for them, to put on the flashboards, and this Commission can have the experiment tried and we will go to the expense, whatever it is, \$10,000 or \$15,000, that we would have to do anyway, and give you an illustration. Regarding all this theory as to the fears of what would be done, if you say the word after you have investigated we will go to the expense and put the flashboards on so you can try the experiment. If you find that it cannot be raised to 500 in Rainy lake, perhaps it can be raised to 499.5 or perhaps to 499. We are perfectly willing after this matter is studied for this Commission to let them decide.

Now, as to the scenic beauty. When a man goes into a wilderness where the property is not worth \$100 for a million acres, as was the case when I came up here, and builds mills and spends every dollar that ever was spent to open it up, I say to you that we are entitled to a very different consideration than we would be if all we had to do were to get on a railroad train and ride up here and start building our dams. It took five million dollars or more to build that railroad, and even up to date there is a mortgage on it of \$1,100,000 that never has paid the original investment, to say nothing about the bond issue. I say we are entitled to a very different consideration in this case, and every man that has bought an island has known, or could have known, what this lake level was desired to be.

As to the upper lakes; some people infer that that was an after consideration. It was for a while, but the first survey we started to make on those upper lakes was in 1911. I had a large crew of men up as far as Lac LaCroix in the winter of 1911.

I claim that the scenic beauty will not be lessened, and even if it were, under the circumstances we are entitled to more than usual consideration.

If the secretaries will be kind enough to give me a memorandum of anything the Commission has asked for in the way of data, we shall be glad to furnish it at any time, and I do not mind telling the Commission the reason we did not answer the questions as to two or three points, but I do not want to do it publicly.

SIR WILLIAM HEARST. Mr. Backus, have you formed any estimate of the length of time and the cost necessary to make a detailed contour survey so we would have the whole thing before us? It is quite a contract, is it not?

MR. BACKUS. Yes; it is. If the Commission desires our engineers to work with their engineers in the preparation of that data so as to expedite the matter we would be very glad to do that. It will cost at least \$50,000 and how much more I do not know.

SIR WILLIAM HEARST. It might cost several times that much?

MR. BACKUS. It ought not to cost several times that amount.

MR. ELMQUIST. Reduced to the last analysis, Mr. Backus, your statement appears to be this, that having come up into this country thirty-one years ago and opened it up and established certain interests here, all other persons who desire to build homes or lake resorts or make investments of any kind should do it in accordance with some design which you had for the full development of this water?

MR. BACKUS. I think he should do it so it would not conflict with that design, if the design were one that seemed to be a practical one.

MR. ELMQUIST. You have told a very interesting story. Will you for the record state what your resources were at the time you came here thirty-one years ago, in round numbers, of course.

MR. BACKUS. Do you mean what I was worth in dollars and cents?

MR. ELMQUIST. Yes.

MR. BACKUS. I do not object at all. About three million dollars.

MR. ELMQUIST. Thirty-one years ago?

MR. BACKUS. Yes, sir. I did not have to work for a living from that time on.

MR. ELMQUIST. What are your total resources today?

MR. BACKUS. I could not tell you if I wanted to. I have been working pretty hard. While the other boys have been playing golf and traveling down the Nile, etc., I have been on the job about sixteen hours a day.

Mr. CLARK. I am very sorry that the Canadian members of the Commission have been compelled to leave before we close, but we will have some little time in which the record will be continued the same as though they were here. What we will lose will be the pleasure of their society and the benefits we might derive from their examination, and without objection we will continue. We hope, however, that will not be taken as an indication that we desire unbridled declamation.

STATEMENT BY MR. J. P. OPSAHL

Mr. OPSAHL. Following out what I stated before, after listening to the different objections to doing anything to change nature along the border lines of the lakes and rivers north of here, I wish to state that according to the evidence, I believe, without advertising or anything of that kind, I am the largest individual property owner on the northeast watershed that has appeared here that would be affected by the storage dams or the development of water front for summer resorts. To qualify those things, I started in that game in 1888 and have followed that up for my own benefit, the Shalaburgers, the Pacific Lumber Company, the Weyerhaeusers, and for a little over twenty years I have been chore boy in the woods for Walker and Pillsbury in developing their property and for nine years I handled some of the Ruggles' property, so that in developing twenty-one different waterfront tracts I feel that I am qualified to say that I have had a little experience and would be glad to have any of the Commission examine to see that the scenic beauty of those tracts which we have undertaken to develop has not been destroyed, but I believe it has been to the benefit of the community and to the people in general. It is on that account I came to you the day before yesterday and asked for the privilege, as long as it did not interfere with the other plans that we supposed were entirely sewed up, for the construction at what is called Picture Rock in section 11-65-11 of a dam approximately 53 feet high that would raise the water back to the normal level of Basswood lake flooding what is known as the Horseshoe river basin back to Horseshoe lake.

As nearly as we can estimate it, the flowage on the American side would be between 1,500 and 2,000 acres with a 53-foot dam, mostly our own property. On the Canadian side the flowage will be less on account of the fact that there is no real basin in between the bluffs. By such a flowage we would take a piece of property that we have held mostly since 1906 or for nineteen years, property that is practically worthless from a summer resort or tourist standpoint, but that through such a flowage could be raised so that there would be about nine miles of good shore on the American side, and

five miles of good shore on the Canadian side without raising Basswood lake one foot. It would improve navigation as far as those particular waters are concerned. If we comply with the rules and regulations of the state fisheries and the federal fisheries on our side of the border, I believe it will not destroy the fish life but it will help. So, on that account, I believe we can work under your guidance, and under proper rules and regulations for the benefit of the tourist travel, of the public at large and of parties like my family who have held their property for nineteen years without any use, hoping that we could at some time develop it. What led me when I first saw Picture Rock twenty years ago was that we had taken over what is known as the Light and Power Company's plant property at Bemidji and handled and developed that through the Warfields as a power site for some eight miles on the river, in which development the people were just as much concerned on account of the summer resorts on Bemidji lake as some people here. Since the Warfields got the dam established in 1909 or the early part of 1910, the dam has had a regulatory effect on the water storage and the lake for tourists, and it has made the property along the river where the water was raised 25 feet in places, very beneficial to the adjoining property, where the flowage was cleared out and fixed before the water was raised. Where the flowage was not cleaned out before the water was raised, it has been to some extent an eyesore. As regards our property, if we were given permission, if we had the control of that, we are perfectly willing to comply with the same rules as I enforced on the Warfields when they got flowage rights from myself and my associates, to clear those waters. I wish to put that in from the standpoint of the Ely people and the others in the Arrowhead district where I represent four other land holders in the development land. I think under your guidance the Arrowhead district can be benefited instead of damaged, by proper rules and regulations for the betterment of inlets and outlets, as well as the storage of water and its power.

Getting back to the dam with regard to which we ask permission to make surveys and file them with you, a dam constructed at Picture Rock in section 11-65-11 is approximately three and a half miles in an air line across the Canadian border from Upper Basswood falls on Basswood lake and between eight and nine miles by river. Such a dam if built at this place and bounded by natural retaining walls, could raise the water back to the level of Basswood lake, and it would furnish navigation, if you care to call it such, or boat transportation into Horseshoe lake where there is a railroad at present.

Since 1888 my personal function in Minnesota has been to develop lands, and not operate power plants, but to sell the property to

others who were so functioning. I am qualified therefore to go ahead with the detail work, and we have a Minnesota corporation to carry out the plans and do the work there. We are able to do it. But if the property was developed as it should be developed as a pulp grinding power plant for the pulp to be made into paper at some other mill either here or outside, I think all the power could be used beneficially for Canada as well as for the United States and more power could be developed if it could be utilized. Transportation for the ground pulp can be found in a practical way down the lakes if storage basins are put in without going to any great expense. The engineering features can be overcome if the storage basins are put in. If that is not agreeable the paper pulp could be got out by the railway at Horseshoe lake. I want to leave this with you representing the interests of myself, my family, the Walkers and Ruggles in the Arrowhead district, as the land development part of it, that I do not fear, nor do many of the citizens in places from which petitions have been presented to you signed in a general way, fear the development under proper guidance of your Commission or other proper federal authority will hurt either the scenic beauty or the industrial and commercial development of the Arrowhead district. If it is up to us to carry out the lower Basswood falls development, we will be glad to assist your engineers or to comply with any rules that are feasible.

With regard to fears of the fluctuations of the waters, after we had sold the flowage rights in approximately eight miles of river bed at Bemidji lake, if you come and visit that portion of this lake, I believe we have as nice a flow as you have anywhere in the north country that will show for itself what nature has done for us. In the dry year of 1910 the dam was in existence. They were new to the business. They had agreed not to raise the water above a certain level, but this boat club in order to run their boats got together and dredged the outlet and the first thing they knew they were down to a point where all the boats were marooned. The power company was negotiated with, and since 1910 after we got the rains after the extreme drought, under agreement with the power company, the Warfields of that time through the Minnesota Power and Light Company have raised the Bemidji lake level and flowage in such a way that it has been satisfactory to lake shore resorts and boat owners in all those years. Prior to that, there were fluctuations up and down so that boating was uncertain. I do not say that Backus or others may be as good to deal with as the Warfields anyway. I have no brief for them, but the Warfields made a development that was a benefit instead of a detriment to Bemidji.

Mr. OBERHOLTZER. I remember that at the beginning of this session you expressed some embarrassment as to what interests had been back of the proposal to raise the lakes, and many of us who were objecting of course had acted only on suspicion as to what those interests were. I think by this time there can be no longer any embarrassment or doubt as to who really desires the raising of the lake level. You have just listened to a very eloquent plea from Mr. Backus for special consideration. At least it appears that we are in exact agreement with Mr. Backus on this very point that he wants special consideration, and we should like to have that point emphasized. Does it not seem strange, though, in a region of 14,500 square miles lying in two countries, it should be necessary for the new inhabitants, instead of going to the constituted authorities, to go to the office of a private individual in order to inquire as to what stage it is proper to erect their buildings and other works. In spite of our agreement on this point to be emphasized, we all feel for Mr. Backus, as master builder, the very greatest respect for his ability and courtesy.

Mr. BACKUS. Just in answer to that, I think it might be proper for me to call attention to the fact that our plans show 497 with provision for three feet of flash boards so that in either country anyone wishing to acquire property or to build on these waters, saw that the contemplated level was 500.

Mr. CLARK. I think the record is pretty plain upon that point.

Mr. OPSAHL. In view of these protestations, as a property owner up there, I would plead with you to establish a level on Lac LaCroix and Crooked and Basswood lakes as soon as you can so that the people may know what they are going to do with regard to improvement. There are no improvements whatever on Lac LaCroix and Crooked lake at present. Establish that level and then we will try to develop to fit the level. Will you please do that?

Mr. CLARK. The operations of this Commission and our report to the two governments will be made as soon as possible using all necessary precautions to have everything right and every interest protected that can be protected. That cannot be done by next Saturday night nor by a year from next Saturday night. I think very few understand the difficulties in the way of making this examination. It is expected, however, that the greatest speed will be used, going so far as probably to make a preliminary examination of the watershed and the contours by aeroplane, and you can rest assured, and all others can rest assured, that the utmost diligence will be used by the Commission and all the agencies at its command.

Unless there be others who desire to have their views incorporated in this record, the Commission now desire to thank all those who

have given them information, much of which has been of very great value and will be preserved and carefully studied. I thank you for your courtesy, for your patience with the Commission, and we desire particularly to thank the authorities of this county for the splendid accommodations which they have given the Commission for this hearing. The hearing of the Commission, so far as this particular reference is concerned, is now adjourned subject to the future call of the chairmen of the two sections of the Commission.

(The hearing was thereupon closed.)

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