

(Triplicate)

APPENDIX "A"

*Report*  
Notice and Minutes of Public Hearing  
in connection with  
Preliminary Examination of  
"SKAGIT RIVER, WASHINGTON,  
WITH A VIEW TO THE CONTROL OF ITS FLOODS,"  
directed by  
Flood Control Act of May 31, 1924.

-----  
Mt. Vernon, Wash., Nov. 26, 1924.



143.82/85

WAR DEPARTMENT  
United States Engineer Office  
602 Burke Building  
Seattle, Wash.

November 15, 1924.

NOTICE OF PUBLIC HEARING

A public hearing will be held in the Commercial Club at Mt. Vernon, Washington at 1 P. M., Wednesday November 26, in connection with a report on preliminary examination of Skagit River with reference to its floods which was directed by the Act of Congress of May 31, 1924.

The purpose of the hearing is to give interested parties an opportunity to present their views and any facts that may have a bearing on the solution of this problem.

The information desired includes the following items:

- (a) Frequency, duration and height of floods, including (preferably shown on maps) areas subject to floods of different heights.
- (b) Detailed estimates of the damage caused by floods to various interests.
- (c) Cost of levees (dikes) already constructed and annual cost of maintaining same.
- (d) Suggestions as to the methods considered most desirable for flood relief.
- (e) Amount of cooperation to be expected on the part of local interests in carrying out any comprehensive scheme for flood relief.

While for accuracy of record all important facts and arguments should be submitted in writing, oral evidence will be heard.

W. J. Barden  
Colonel, Corps of Engineers  
District Engineer.

Public notice of hearing for flood control on Skagit River, mailed to:

Chief of Engineers, U. S. Army, Washington, D. C.	
Division Engineer, E. P. Division, Seattle, Wash.	
< Hon. Wesley L. Jones, U. S. Senate, 1162 N. Newton,	Seattle, Wash.
< Hon. C. C. Dill, U. S. Senate,	Spokane
< Hon. L. H. Hadley, M. C.,	Bellingham
> Post-Intelligencer, (News Item)	Seattle
Seattle Times "	"
Seattle Star "	"
Pacific Builder & Engineer, "	"
Daily Journal of Commerce "	"
Mt. Vernon Herald "	Mt. Vernon
Postmaster, (To post)	"
" "	Stanwood
" "	Fir
" "	Sedro-Woolley
Chamber of Commerce	Mt. Vernon
do	Stanwood
do	Fir
do	Sedro-Woolley
The Mayor <i>Dear Tyler, 1015 1st St. Seattle</i>	Mt. Vernon
Northwest Rivers & Harbors Congress, 419 Commerce Bldg.	<del>Everett</del>
> Skagit River Navigation Co., Pier 1	Seattle
Anderson Bros. Towing Co.	LaConner
Stanwood Navigation Co.	Stanwood
Albers Bros. Milling Co.	Seattle
> Standard Oil Co.	"
> County Commissioners, Skagit County,	Mt. Vernon
< H. L. Willis, Chairman, Skagit Co. Citizens' Committee	"
> Puget Sound & Cascade Ry.	Clear Lake
* Skagit River Logging Co., 911 Alaska Bldg.	Seattle
> Carnation Milk Products Co.	Mt. Vernon
Tom Moore Boom Co., 1540 West 46th St.	Seattle
J. W. Hoover & Co.	Everett
Herbert B. Horn, 212 North 1st St.	Mt. Vernon
> Slosson Logging Co.	"
Diking District No. 1, Swan Swanson, Secy.	" R#1
" 2, Perry Edler "	" R#3
" 3, C. C. Nelson "	" R#3
" 4, A. J. Lawson "	"
" 5, Thos. A. Seary, Jr "	Blanchard
" 6, Walter Peth "	Mt. Vernon
" 9, O. D. Carrier "	" R#2
" 12, W. E. Jennings "	" R#1
" 13, Nils Tellesbo "	" R#3
" 15, John Summers "	" R#3
" 16, Kenneth McLeod "	" R#5
" 17, Robert Nordlund "	" R#6
" 18, John Wylie "	" R#3
" 19, C. J. Eddy "	Bow, R#1
" 20, S. W. Butler "	Mt. Vernon, R#6
" 21, Albert Olson "	" R#3
" 22, Geo. A. Sewell "	"

\*Returned by P.O.

W.P.  
STATE  
Columbia  
P.

Blackmore Transfer Co.	Mt. Vernon, Wash.
Independent Asphalt Paving Co., 918 Seaboard Bldg.	Seattle
<del>A. R. Cook, Prin. Asst. Engr., Northern Pacific Ry.</del>	"
<del>O. S. Bowen, Asst. Chief Engineer, G. N. Ry.</del>	"
State Highway Commission, <i>East Stanwood, Skagit Co.</i>	* Olympia
Pacific Northwest Traction Co., Northern Divn.	Bellingham
Mr. J. O. Rudine,	Mt. Vernon
* Mr. Chas. A. Nelson	Bellingham
Mr. Geo. B. Reay, County Commissioner	Mt. Vernon
Mr. H. L. Crowe, Sec. Commercial Club	Stanwood
Mr. C. R. Amundson, Commercial Club	East Stanwood
✓ Mr. H. H. MacDonald, Pres. Skagit River Navigation Co.	Seattle
Mr. W. H. Franklin	Mt. Vernon
Mr. J. W. Collins, Sec., Commercial Club,	"
Mr. Chas. Elele	"
Mr. Gus Johnson	"
Mr. W. E. Moss, Commercial Club	"
Mr. B. D. Moody	"
Mr. W. N. MacBrier, Chief Engr. Carnation Milk Products Co.	Seattle
Mr. John S. Finstad,	Conway
Mr. A. Brawley, Judge Superior Court	Mt. Vernon
J. M. Humphrey, Gen. Mgr. Skagit County Dairymen's Assn.	"
James O'Hearn, Mgr. Tom Moore Boom Co.	Milltown
✓ Clear Lake Lumber Co. <i>Rayet Lake &amp; Polak &amp; ...</i>	Clear Lake
F. C. Johnson, Secy. Skagit County Farm Bureau	Mt. Vernon
Alfred Polson	"
F. N. Haley, Civil Engineer	Anacortes
R. W. McKinstry	Mt. Vernon
P. W. Trueman	Lyman
✓ William Hayton	Mt. Vernon
W. J. Knutzen	Burlington
✓ Mr. Robert E. L. Knapp, County Engineer	Mt. Vernon
W. S. Stevens, Contractor, Skagit Construction Co.	"
F. W. Benedict	"
G. M. Kinsely	"
George W. Sheriff	"
William Calkins	"
H. P. Hansen	Burlington
Ed Byron	Mt. Vernon
John L. Lindamood	Burlington
*Glenwood Husley	"
*G. H. Brodland	"
A. Anderson	Mt. Vernon
B. G. Leaf	"
*J. L. Hancock	"
John B. Peterson, Civil Engineer	"
Martin G. Olson	"
Martin Gunderson	"
G. O. Brandstad	"
H. R. Leedorn, Auto Assessories	"
P. J. Holter	"
Alfred Johnson	"
Frank Jungquist	"

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E. H. Bailey, Engineer, Mutual Life Bldg.	Seattle, Wash.
George Johnson	Mt. Vernon
Grant Knight	"
F. F. Willard	"
* E. D. Royston, Civil Engineer	Sedro Woolley
Frank H. Jerome, Skagit National Bank	Mt. Vernon
J. Pezelberger	"
G. C. Berger	"
Lawrence Herrle	"
S. A. Halland	"
Robert Herzog, Assistant Engineer, G. N. Railway	Seattle
H. F. Brown, " " N. P. Railway	"
Herry Pearson	Mt. Vernon
Chas. Callahan,	Burlington
Sam Schilleman	Mt. Vernon
L. E. Smith, Civil Engineer	"
✓ Ray Eldridge, Editor, Mt. Vernon Argus	"
Gilbert Hansen	Fir
* P. O. Sam	Mt. Vernon
Clarence Johnson	Fir
John Hegelberg	"
F. C. Fellows	Lynn
John Krangnes	Mt. Vernon
Nelson S. Abbott	"
✓ Chamber of Commerce	Seattle
✓ G. L. Parker, Dist. Engr. U.S.G.S. 404 Federal Bldg.	Tacoma
✓ F. S. Siegel, Snagboat Swinomish	Mt. Vernon
✓ The Mayor, City-County Bldg.	Seattle
✓ Puget Sound Power & Light Co.	"
✓ Superior Portland Cement Co.	Concrete

\*Returned by P.O.

## MINUTES OF HEARING

held at Mt. Vernon, Wash., Nov. 26, 1924,

on Preliminary Examination of

"SKAGIT RIVER, WASHINGTON, WITH A  
VIEW TO THE CONTROL OF ITS FLOODS."  
(Flood Control Act of May 31, 1924)

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The hearing was called to order at 1:10 P.M. by Col. W. J. Barden, Corps of Engineers, who read the notice of hearing, the regulations governing the general procedure (C. & E. 384) and explained the terms of the Act of Congress of May 31, 1924, which directed the preliminary examination.

The following papers were presented and read:

- Appendix B-1: Letter dated Nov. 26, 1924, from Skagit River Improvement Committee, by H. L. Willis, Chairman.
- Appendix B-2: Letter dated Nov. 26, 1924, from Robt. E. L. Knapp, County Engineer, Skagit County.
- Appendix B-3: Statement of expenditures from River Improvement Fund, accompanying above.
- Appendix B-4: Affidavit of J. C. Rudens.
- Appendix B-5: Affidavit of Nils Tellesto.
- Appendix B-6: Letter dated Nov. 24, 1924, from Commissioners of Diking District No. 3.
- Appendix B-7: Letter to the River Committee, unsigned.
- Appendix B-8: Statement of expenditures of Diking District No. 17.

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MR. WILLIS: I might say just a word further in regard to the dams that are briefly mentioned here (appendix B-1). I don't know just what County Engineer Knapp will say on that, but the suggestion is if Skagit County or the War Department, or whatever Government department would take hold of this, could in some way make some provision or some arrangement with the people who are building these dams so that the top ten feet could be held as suggested, it would give a big measure of relief. It would seem that would be a way of getting some kind of relief, so long as the dams are going in, and that is what we have started to investigate, what the cost might be, and see who could be induced to go in and cooperate with us.

COL. BARDEN: I will ask for anyone who wishes to be heard to speak. Mr. Nichols, do you or Mr. Tindall desire to say anything, or are you just here to listen?

MR. RALPH D. NICHOLS, CITY COUNCILLMAN, SEATTLE: Well, we are here to listen more than anything else. We are interested in the problem, of course. We came up here unofficially; Mr. Tindall is chairman of the committee on utilities, and I am a member of the committee; but no thought had occurred to me--it grew out of the discussion we had in your office when Col. Kelly was there, on another

matter, but you raised the question of flood control, and the gentleman over there just carried out the thought that you expressed that day--but the thought occurred to me that it might possibly work out on what you might call some co-operation here whereby this flood control ultimately would cost the Government nothing, if the Government would assist a little in the pioneering period. Of course the development of the Skagit from the standpoint of power is one of business and we have to make haste slowly, but in order for us to get what we need up there it will be necessary ultimately for us to develop the Skagit, but of course we do not need 550,000 horsepower now, nor for many years, but if the condition arose whereby the Government would build a dam to the point where it would absolutely control the floods of the Skagit, and then we could make an agreement that as our business grew we could take it off in sections so ultimately we would take the whole burden off the Government in that way, why there would ultimately be no loss. At this stage of our development we are not financially able to develop it to that point, but our business has grown very rapidly, we are growing more rapidly than we estimated, and if such an arrangement could be made, why we could then go ahead still more rapidly because there is an almost unlimited field, dependent upon our ability to make certain rates. So that while it would be dangerous from a financial standpoint for us to take this thing on as a whole thing, still if the Government would do so, I could see where we could justify ourselves in entering into an agreement with the Government that as fast as we could take over this load, we would pay in utility bonds, which is the only way we have of paying, a certain section of this, so that the Government would only have to pioneer for a few years, because we would be able ultimately to take over the entire capital.

MR. PHILIP TINDALL, CITY COUNCIL, SEATTLE: The point just brought up by Mr. Nichols is rather novel to me, but it is rather interesting, and if the Government could see it in that light, we would appreciate it very much. We all down there have been very much interested in the question of obtaining the right to construct a dam, if we do it with our own money, which I apprehend will be the result anyhow unless the Government could be persuaded to do a little financing. A few weeks ago I took a hurried trip down here and met with the Board of County Commissioners and Mr. Knapp, the County Engineer, and also took up the matter of getting Skagit County to indorse the application which the City of Seattle has made for the right to construct that dam at the junction of Ruby Creek and the Skagit River. We have no particular reason to fear that the Federal Power Commission will not grant us that right, but it did occur to us that if the residents of the Skagit Valley indorsed our application, it would give it an even stronger standing with the Federal Power Commission than it might have standing alone. To me, this is the solution of the whole question. If we build that dam there, build it high enough, there will be no more Skagit floods; that is to say, of any consequence, and it will be an insurance against the recurrence of these floods and the loss that they entail. I don't know of any better stroke of business that this meeting can do than to pass a resolution indorsing the application of the City of Seattle and urging the Federal Power Commission to grant it. This gentleman in his paper here has referred to the wish of the County that the ten-foot margin of safety or storage capacity be always maintained, and of course whatever is right and proper, whatever the Government would say is necessary to maintain that margin of safety, we would have to accede to. That was my main purpose

in coming down here, to see whether this meeting would lend itself to a movement to ask the Federal Power Commission to grant us that right. We have a tremendous investment of money there without adequate water supply, and we have to get this water by impounding these floods, and while we are doing that from a selfish standpoint so far as we are concerned, we are certainly putting an end to these floods.

COL. BARDEN: Is there anyone else who desires to make any statement? (No response). Well, gentlemen, if there is nothing else I will adjourn the meeting in a minute or two. The papers presented, especially those by Mr. Willis and by the County Engineer, Mr. Knapp, have covered the ground quite fully. They give us the information that we wanted so far as it is available. In addition to that, we have had Mr. Fease, one of our engineers, off and on now for a couple months getting additional information. I would like to emphasize the point, that Mr. Knapp brought out in his paper, that before any really scientific plan can be prepared for the protection of this valley from floods, it is necessary to have more authoritative information than we now have as to the amount of water carried by the river in time of floods. The steps that the County is now taking to secure this are along the right lines and are evidently being carried out with accuracy, and should give in course of time the information needed. Of course it may take some little time to secure that. This data that he gets will give accurate information for the moderate stages of the river, but the amount carried in time of floods cannot be secured until those floods occur. We don't know just how soon they will come, but if the rating curve is fairly well established for moderate stages of the river, it can be extended, with sufficient accuracy to give some more definite information as to the volume of these larger floods than we have at present. The information that was collected by Mr. Stewart and given in his report to the committee was excellent so far as the data that he had to work upon permitted, but that data was necessarily more or less inaccurate. He had to gather it from various sources and then form his conclusions as to what that data really indicated. There is no question that if these two dams that have been spoken of (the City of Seattle's proposed dam at Ruby Creek and the second of the dams proposed to be built by the Puget Sound Power & Light on the Baker River) are constructed, some benefit can be secured in the way of flood protection if they are built higher than necessary for power purposes, or what is another way of saying the same thing, if the water level is kept at a certain height below the maximum at all times. This first dam that is being built now by the Puget Sound Power & Light Company will not give any flood protection, because the storage area is too small; in other words, it will always be full when floods come, and therefore will be of no use in time of floods. The second reservoir that they propose to build perhaps in the next five or ten years offers possibilities of flood prevention if built as I have indicated, and the same is true of the Ruby dam, but those two will not entirely solve the question. If those two dams were in and they took the entire discharge of the areas above them, in times of maximum floods, the discharge from the remaining portion of the watershed would still give us floods that could not be carried by the river in its present condition, so that something else is still necessary. As Mr. Knapp just said, there are several plans by which these floods can be alleviated, and the question as to which plan would be best and cheapest can only be determined as a matter of detail study of information which is not now available, but which can be secured. It would be



possible to build reservoirs at other points than those two that I have indicated, but reservoirs built for flood prevention alone would be very expensive. In course of time other reservoirs may be built for power purposes which may be also utilized for flood prevention, but so far as known to our office there are none in immediate prospect. Investigations have been made at other places, on the Cascade River, and on the Sauk and on the tributaries of the Sauk, and it is very possible that in course of time some of these may be built, but there is no immediate prospect of them.

If there are any questions that anyone wants to ask, I will be glad to answer if possible.

MR. NICHOLS: The proposed gorge dam of ours would have no value for flood protection.

COL. BARDEN: No, sir.

MR. WILLIS: That is because it is too small?

COL. BARDEN: It has no storage capacity.

MR. NELSON ABBOTT: I would like to ask you if you are aware which one of these streams up there was the one which gives the most of our floods. Now, they tell me that the Sauk is the one which usually gives us the most water.

COL. BARDEN: We haven't the exact information to answer that question. I can partially answer it by giving you some figures that have been secured by these more or less fragmentary observations, discharge measurements, that have been made by the Geological Survey at different times.

MR. ABBOTT: I guess it doesn't matter, but I was thinking if those other two dams were handled the same as you said some time ago, there would still be floods, because the Sauk is the main one.

COL. BARDEN: The discharge in second-feet per square mile of the upper Skagit is much less than of the Cascade or of the Sauk, or of the remaining drainage area of the entire valley, and while there is something like 900 square miles above this Ruby dam, the actual amount of water coming down there is less than from an equal area in other localities. In the year 1910, which is the only year in which records are available for these five localities that I will mention, the discharge in second-feet per square mile of the upper Skagit was 19 second-feet; of the Cascade 50 second-feet; of the Sauk 85; of the Baker at the mouth 85; and at Sedro Woolley 30; indicating that the greater portion of the flood waters came from other tributaries than the upper Skagit. In the same way the maximum discharge figures that we have in second-feet per square mile at different periods, at different times, give for the upper Skagit 65, for the Cascade 142, for the Sauk 122, and for the Baker 158.

MR. NICHOLS: What is the reason for that?

COL. BARDEN: I am not able to answer that exactly. It seems that these other tributaries apparently have their sources in a little higher portions of the divides where there is more snow, and also, although it is not certain

in my mind, since the upper Skagit is a little farther off. It may be that the moisture-laden winds which come from the southwest may have most of their moisture taken out in the form of rain or snow before they reach that area.

MR. NICHOLS: There is more precipitation down here than there is up there.

COL. BAEDER: Apparently so. If there is no other question, the meeting will be adjourned. Thank you, gentlemen.

(Hearing closed at 2:20 P.M.)

About 70 people were present at the hearing, including the following:

H. L. Willis, Chairman, Skagit River Improvement Committee	Mt. Vernon, Wash.
Philip Findall, member of City Council	Seattle
Ralph D. Nichols " " "	"
Nelson S. Abbott, Chairman, Diking District No. 17	Mt. Vernon
J. O. Rudene, farmer	"
Nils Tellesbo, Commissioner, Diking District No. 13	"
J. M. Gunderson, Farmer, Diking District No. 2	"
C. Olson "	Fir
Geo. P. Hoffman	Burlington
H. C. Hoffman	"
Geo. W. Sheriff,	Mt. Vernon
E. A. Sisson	Anacortes
Alfred J. Hoffman	Bow
F. G. Segtmeier, Port Commission	Everett
A. G. Rinbeck, Chamber of Commerce	"
Thos. G. Mortland " "	"
Marvin W. Smith, Secretary, Port Commission, 413 Commerce Bldg.	"
T. J. Brennan, Farmer	Mt. Vernon
J. W. Hastie, Farmer, Diking Commissioner Dist. No. 13	"
J. R. DeBari	Seattle
H. Stump, Diking Commissioner, Dist. No. 19	Mt. Vernon
G. J. Eddy " " " "	"
Al Benson " " " "	"
Geo. B. Reay, County Commissioner, Skagit County	"
John S. Finstad, Dairy Products	Conway
Geo. W. Esary, Broker	Mt. Vernon
Wm. Galkins, Farmer	"
A. J. Lawson	Blandhard
E. G. English	Seattle
C. D. Cable	Bow
Perry Pearson	
G. M. Kinsely	Mt. Vernon
E. Herzog, Great Northern Railway	Seattle
H. F. Brown, Northern Pacific Ry.	"
R. E. Eulson	Mt. Vernon
S. P. Holt, Farmer	"

W. C. Esary, Farmer  
N. M. Cullough, Farmer  
Ralph D. Nichols, City Council  
John Krangnes  
A. Anderson  
C. G. Leaf  
C. G. Nelson

Mt. Vernon, Wash.  
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Seattle  
Mt. Vernon  
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