

Mount Vernon, Washington,
Nov. 26, 1924.

Col. W. J. Barden
Seattle, Washington

Dear sir:

In answer to your call for a public hearing in Mount Vernon, on Nov. 26, 1924, to secure information concerning the floods in Skagit River, we submit the following:

FREQUENCY, DURATION & HEIGHT

As to the frequency, duration, and height of floods in the Skagit River, we refer you for greater details to the comprehensive report submitted to the Skagit County Commissioners by Mr. J. E. Stewart in 1922. A copy of this report was also filed with the U. S. Geological Survey.

Mr. Robert E. L. Knapp, County Engineer of Skagit County, will submit a report giving a briefer outline of the information you desire on this point, together with such other related facts as he may have been able to assemble.

Leaving, for the moment, your second object of inquiry, estimate of damages caused by the various floods, I will take up briefly the remaining three inquiries. The cost of dikes already constructed, together with repairs and enlargements has, up to date, exceeded one and a quarter million dollars. This has been covered in detail by Mr. Pease study and report to you recently.

Your request for suggestions as to the methods considered most desirable for flood protection or prevention, call for more expert knowledge than the ordinary citizen possesses. This is not saying that every man in the valley has no remedy, for we all have our ideas of how to prevent floods. Many of these plans of ours are impractical, either from the standpoint of cost or from the standpoint of the science of hydraulics of which we know little.

The era of power development for electrical purposes into which we are now entering seems to give hope along a practical line for flood relief. There is at present one large dam on Baker River in process of construction. Another one is projected on the Skagit at Ruby Creek. Still another on the Sauk River has been discussed. If arrangements could be made with any or all the builders of these dams to hold always available the upper ten feet of the dam for flood storage, the greater part of our flood menace would seem to be gone. Such storage for forty-eight hours would hold back the crest of the flood and give time for run off. It is the crest of the flood that breaks the dykes and does the damage. A preliminary investigation has already been started along this line by the Citizen's River Committee. County engineer, Knapp, will also cover this point and I will leave any further suggestion or more detailed discussion of this one to his report.

Your last inquiry concerning the amount of cooperation to be expected on the part of local interests in carrying out any comprehensive scheme for flood relief is perhaps the most difficult to answer; since it depends wholly upon the mental attitude and financial ability of the people in the Skagit valley tomorrow, next year, and twenty years hence. From the fact that we are now spending money in collecting flood data, that we have already spent more than a million and a quarter on our dykes and from the further fact that we have suffered millions in flood damages and will lose further millions, if so much is left to us to lose, unless some measure of protection is taken, it would seem that the people of this valley could be depended upon to give their full measure of support to any practical scheme which would require cooperation. Either the county engineer or a member of his staff will give a report on the most recent activities of the county in the line of securing further flood data.

DAMAGE CAUSED BY THE VARIOUS FLOODS

To return now to the second heading of your inquiry--detailed estimates of damage caused to various interests. In answering this, I will quote in considerable detail from a report made two years ago by Mr. J. W. Collins, Secretary of the Mt. Vernon Commercial Club.

Mr. Collins says, "The spring flood of 1894, although it did not cause as much destruction by washing and breakage as some of the fall freshets, probably cost as much as any of the others. The complete destruction of the year's crops caused a loss of approximately \$1,500,000. This flood impressed upon the settlers the necessity of protection against the spring freshets, and from this time on the system of dikes was greatly increased and extended in its scope."

"The flood of 1897 washed out the Great Northern Railway embankment at Sterling Bend between Burlington and Sedro-Woolley, and cost the company a large sum in replacements and repairs. The southern part of Mount Vernon was also flooded and the county court house was converted into a refuge for the flood sufferers. The district above Concrete suffered more severely in this flood than in any since that date. Several hundred head of cattle were lost and a number of horses, barns, and out-buildings were washed away in this vicinity alone."

"The flood of 1906, while not as disastrous as that of 1897, caused a loss in stock and property of \$250,000."

"The 1909 flood caused irreparable damage to farms in some localities by covering them with sand and gravel in some instances, and in others, by washing them completely away. There were lost in this flood more than three-hundred head of horses and cattle, six hundred head of sheep, four thousand tons of hay, a large quantity of oats and untold quantities of straw and other valuable farm products. The Great Northern Railway embankment from Mount Vernon to Burlington was completely destroyed and serious damage done to the right of way of the State Highway. The dike on the west side of the river above Mount Vernon was broken and the entire town of Mount Vernon west of the river was flooded, causing a large property damage. As an indication of the heavy loss

in washouts of dikes and drainage ditches, the following figures showing expenses of three dikes districts in the county are significant:

	District 1	District 3	District 12
1909	\$3,449.10	\$12,086.34	No tax
1910	37,000.96	17,153.06	\$18,860.40
1911	9,218.36	13,913.80	4,184.02

Considering the fact that there are twenty-one districts in the county, the above figures will show a very heavy loss from this source alone. \$1,500,000 would not be an excessive estimate of the damage done by this flood."

"The flood of 1917 likewise washed out the Great Northern Railway embankment from above Mount Vernon to Burlington. Also the right of way of the Pacific Northwest Traction Co. between the same points. It seriously threatened the town of Burlington. For a period of nearly two weeks communication with Mount Vernon and nearby towns was by steamer alone. This flood caused extensive damage to the dikes, although not so widespread as the flood of 1909. The loss in dollars and cents was approximately \$500,000.00."

Mr. Collins, in his report, while he gives many very valuable details of the kind of damage, gives only a lump sum for the total estimated damages. So far as I have been able to learn there has been only one detailed estimate of damages caused by any of our floods. That was made by Mr. H. W. Devin, of Sedro-Woolley, directly after the 1921 flood. This flood was nearly as great in discharge as that of 1909, but the damage was probably considerably less. Very few losses in this or any flood are matters of actual record.

In the case of one town, however, we have a definite item. To repairs the damages done by the 1921 flood to the streets, sewers, and crossing cost the city of Burlington \$7,102.74.

The cost to repair the roads and bridges of the county after a flood has not heretofore been segregated from the regular road and bridge expense. The county always holds the funds for roads and bridges in reserve until after the usual flood period. If a flood occurs these funds are used to repair the damages. If no flood occurs, the funds are used for the customary improvements and extension. In this way, it has happened that the expenses for roads and bridges has not increased materially following floods. Improvements and extensions have merely been postponed while the money went to repair flood damages.

Hence it comes about that the estimates prepared by Mr. Devin in January, 1922 are the most accurate now obtainable. Mr. Devin spent three weeks collecting data for these estimates and the only item that he considers a real estimate is that on "Damages to land and future crops" which he has placed at less than half the figures put upon it by the farmers consulted.

Following are Mr. Devin's figures for the flood damage in 1921:

Public roads and bridges	\$ 75,000.00
Buildings	30,000.00
Loss of logs and bolts	105,000.00
Merchandise and personal property	45,000.00
Dykes, ditches and drain tile	100,000.00
Crops, harvested and unharvested	30,000.00
Live stock	5,000.00
Damage land and future crops	100,000.00
Loss of wages	<u>15,000.00</u>
Total	\$505,000.00

There are also intangible losses. Among these are many thousand dollars in loss of trade and merchants either through the sudden cutting off of transportation or through the crippling of the customers' ability to buy.

The total losses from all floods in the past fifty years have been enormous; yet as the valley becomes more highly developed each succeeding flood is likely to be more disastrous than the last. The damage to the present valley of such a flood as that of 1820 which had nearly double the discharge of 1909, or of a flood like that of 1856, which was 40% greater than that of 1909, can hardly be conceived. While we yet have some property to protect, it behooves us to seek out some practical method to curb this flood menace which is always lurking in the mountain ready to burst upon us.

Respectfully submitted,

SKAGIT RIVER IMPROVEMENT COMMITTEE

H. L. Willis

Chairman