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NPSGW

1 April 1961

MEMO FOR: RECORD

SUBJECT: Field Reconnaissance, Skagit River Flood Control Survey

1. Mr. H. W. Young was in the Skagit River Basin from 25 March through 1 April to inspect various aspects of the problem and obtain data to be used in planning further studies. Following is a brief list of accomplishments. The remaining paragraphs of this report deal with special subjects and with actions required.

a. General inspection of valley area, including cities and major towns, agricultural areas, and public utility plants.

b. Inspection of entire levee system and portions of sea dikes with photographs taken of representative sections.

c. Interviews with the following public officials:

(1) Manager of Chamber of Commerce.

(2) County Agricultural Agent.

(3) Conservationist, S. C. S.

(4) President, Skagit County Agricultural Coordinating Council.

(5) Biologist, State Department of Fisheries.

(6) Superintendent, Northwest Washington Experiment Station.

(7) Engineer, Skagit County P.U.D.

d. Visits to all major industrial plants and interviews with plant managers.

e. Inspection of Faber Dam and Reservoir Site.

f. Inspection of Nookachamps Creek overflow area.

## 2. ECONOMIC DEVELOPMENT. -

a. Interviews were held with the managers of all major industrial firms in the basin, and information obtained on number of employees, gross income, production, source of materials, market, and interest in flood control and navigation.

b. A number of folders and booklets on Skagit County were obtained from the Mount Vernon Chamber of Commerce.

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### 3. FLOOD DAMAGE. -

a. Anton F. Harms, the S.C.S Conservationist in Mount Vernon, states that the S.C.S. economist from their Portland Office will be in Mount Vernon this May to organize a farm crop appraisal program, the purpose of which is to determine costs and profits in connection with various commodities. He offered to make this information available for use in our flood damage survey and suggested that we furnish an outline of the material we need. We were invited to send a representative to Mount Vernon while the S.C.S. economist is there.

b. Mr. Jess Knutzen, a farmer living west of Burlington, is President of the Skagit County Agricultural Coordinating Council which includes representatives of farmers associations, the Grange, and commodity groups, meeting every one or two months. He suggested that the heads of the various commodity groups could assist by pointing out on aerial photos the areas where their specific commodity is produced. Following is a list of these individuals:

- (1) Berries - Jim Hulburt, Jr., Sec 36 near LaConner
- (2) Livestock - Art Nelson, Westside
- (3) Poultry - Bill Dynes, Burlington
- (4) Dairy Federation - Jim Wiley, Sec. 23, Fir Island
- (5) Farm crops  
(grasses, peas, corn) - Einar Knutyen, just N.W. of  
Burlington on old highway
- (6) Seed Growers - See County Agent
- (7) Bulbs - No representative on Council.

Mr. Knutyen stated that his father, Wm. J. Knutzen, now living in Burlington, had been one of the first to settle in the area, and would be willing to point out the extent of inundation from past floods.

c. During forthcoming tours of Diking Districts ( See Levees), it would be desirable to have the extent of past flooding pointed out by Diking District Commissioners as an aid in predicting future flood action.

d. Mr. H. K. Rowley, County Agricultural Agent (he will retire this July), stated that the Agricultural Data Book on Skagit County, published by the Washington State Department of Agriculture in 1957, is still applicable. He suggested contacting the King County Agent for additional information.

e. Dr. Martin W. Carstens is in charge of the Northwest Washington Experiment Station near Avon. He offered his assistance to the flood damage survey including the effect of water on crops and grasses. He would like to assist by arranging meetings with processors and heads of commodity groups such as were discussed with Mr. Jess Knutzen. These individuals could point out the locations where the various commodities are produced and provide information on production.

f. Mr. Frank Gilkey, County Engineer, offered to indicate the probable course of flood waters in the event of levee breaks at various points. He can discuss the cost of flood damage to county roads, and can provide data on traffic counts on county and possibly state roads.

g. As an aid to future field parties, it is noted that many county roads have recently been renamed so that signs do not correspond with names on quadrangles. A road map was obtained from the County Engineer so that the quadrangles and flood plain maps may be corrected.

h. Public utility facilities which would be affected by flooding include the following, among others:

- (1) Skagit County P.U.D. No. 1 well near rivermile 16, left bank.
- (2) Anacortes water filter plant near rivermile 15, left bank.
- (3) Mount Vernon sewage treatment plant near rivermile 12, left bank.
- (4) Drainage pumping plants at various locations, see County Engineer.

#### 4. FISH AND WILDLIFE. -

a. There is a Washington State Game Reserve in the South Fork delta between Steamboat and Freshwater Sloughs. This area is protected with a levee which appears to be as high as the levees protecting the adjacent cultivated land. Inquiry should be made as to the need of providing this kind of protection in the event of a general raising of the levee system. The game reserve might be treated as an overflow area in the event of extreme floods.

b. Mr. Clint Stokely, Biologist for the Washington State Department of Fisheries, was interviewed and data was secured on the habits of salmon species in the Skagit. It was suggested that certain reports be requested from the Department. No material on steelhead was obtained.

#### 5. LEVEES. -

a. In many locations, farm or fishing roads across levees are lower than the normal levee top by one to three feet. It was said that the property owners are expected to place sandbags on these roads in the event of extreme high water. However, they appear to be a potential source of weakness and failure. It is suggested that if a Federal project for levee improvement is carried out, local interests be required to maintain all levee crossings at design grade.

b. It would be desirable to record the location of the occurrence of all landward boils to aid in delineating the problem of foundation seepage. This could be done by inspection tours of appropriate Diking District in the company of one of the Commissioners. The Skagit County P.U.D. (Water Supply) report that their investigations for possible well sites revealed few locations where permeable gravels were found.

c. Records of work done on levees in recent years are not reliable. It is suggested that a complete new topographic survey be made of the levees on both sides of the river including the main forks, with a cross section taken where there is a change of section. Representative elevations of the sea dikes should be obtained to determine the depth and extent of flood water which could be trapped behind them.

d. The County Engineer's Office proposes local widening of the river channel at several locations including setting back the levee with reconstruction to a section having a top width of 20 feet and one on three side slopes. Riprapping of channel banks in certain areas also is proposed. State contributions are being sought for these projects. Inquiry should be made occasionally as to work actually being done in order to keep our data current. Some of these locations are: (1) Rivermile 7.5, left bank of North Fork, Moore Road north to bend, widen in FY-61; (2) Left bank at Rexville Bridge, widen in FY-61; (3) Rivermile 7.0, right bank of North Fork, Jones Road east to bend, widen in FY-62; (4) Rivermile 4.0, North Fork, widen, not programmed. The County Engineer represents the State Department of Conservation in authorizing funds contributed for local work. On revetment work, costs are divided, Diking District 30 percent; County, 30 percent; State, 40 percent. A new state law will permit State contributions toward improvement and construction of levees.

e. In connection with levee topographic surveys, a profile of the Burlington-Sedro Woolley divide should be made, possibly along the G.N R.R. track or adjacent highway.

f. Records of explorations for water supply wells were obtained from Skagit County P.U.D. No. 1. These will be of assistance in determining the probable permeability of the natural ground underlying levees. Copies will be made of certain data and the records will be returned to the P.U.D.

g. Mr. Johnson of the County Engineer's Office stated that boils have occurred in at least the following locations: (1) Riverbend area, rivermile 16, on the left bank; (2) North of West side (Mount Vernon); (3) South of West side; (4) Rivermile 7.2 on the right bank of North Fork; (5) Rivermile 9 on the right bank of North Fork.

h. A new list of Diking and Drainage District Commissioners for 1961-1962 was obtained.

6. NAVIGATION. -

a. A Mr. Eugene Hopkins of the Mount Vernon Chamber of Commerce has a file of correspondence from local interests expressing their concern with navigation.

b. Soundview Pulp and Timber Company in Everett has an option to purchase land between Hamilton and Concrete for possible construction of a chipper mill. This development might depend on the availability of water transportations.

c. M. A. Clark of Myer and Clark, 411 Maritime Building, Seattle, has been making inquiries for David H. Sutherland and Company (Iowa?), coal and coke exporters, regarding possibilities of producing coking coal in the Cokedale area.

d. Puget Sound Power and Light has been active in sponsoring what are known as industrial tours in an effort to have firms locate in the northwest. They probably have information on the demand for navigation.

7. PHOTOS. -

a. The S.C.S. has prints of 1941 aerial photos which are available for our use in studying erosion and channel changes.

b. Seventy-two photos were taken of items of interest on this trip, primarily of levees on both sides of the main stem and fork.

8. ACTION REQUIRED. -

a. Immediate. -

*Done*  
(1) Letter to S.C.S. at Mount Vernon stating interest in their farm crop appraisal, listing our requirements in connection with determining annual flood damages, and indicating whether we wish to meet with the S.C.S. economist during his visit to Mount Vernon.

(2) Make copies of well data and return records to Skagit County P.U.D.

*Done*  
(3) Arrange program of levee topographic surveys for next fiscal year.

(4) Correct road names on maps.

b. Near Future. -

(1) Make arrangements to visit Skagit River basin to inspect levees and boil areas in company with Diking District Commissioners. Determine limits of past flooding.

(2) During above trip contact Game Reserve headquarters for discussion of flood protection requirements.

(3) Contact Department of Fisheries for map or written description of salmon spawning and rearing grounds with estimate of fish population in each location.

(4) Write Department of Game for similar information on steelhead.

H. YOUNG