

U. S. ARMY ENGINEER DISTRICT. SEATTLE  
CORPS OF ENGINEERS  
1519 ALASKAN WAY SOUTH  
SEATTLE 4. WASHINGTON

ADDRESS REPLY TO  
DISTRICT ENGINEER  
(NOT TO INDIVIDUALS)

18 DEC 1962

REFER TO NPSN-FR-R

SUBJECT: Levee Repair, Cockreham Island, Skagit River, Washington

TO: Division Engineer  
U. S. Army Engineer Division, North Pacific

1. By letter dated 29 November 1962, the Acting County Engineer, Skagit County, Washington, requested Corps of Engineers assistance in repairing a levee breached by the high water of 20 November 1962. The breach in the levee is at the head of an old slough, on the right bank of the Skagit River about one mile downstream from the town of Hamilton in Section 15, T35N, R6E as shown on the inclosed aerial photograph.

2. The breached levee is about one mile long, has a 10-foot crest, 1 on 1.5 side slopes and is high enough to protect against a flood having a frequency of about 20 years. It was built by a group of farmers some 20 years ago, appears to be adequately maintained by Skagit County, and except for the breach is in excellent condition.

3. Previous work by the Corps consisted of the repair of a breach, about 63 feet long, located about one-quarter mile upstream from the existing breach. Repair of that breach under the provisions of Public Law 99 was authorized by your message NPDGW 269-12 dated 14 December 1959. The work was completed in 1960 and is presently in excellent condition and all terms of local cooperation have been fully complied with.

4. On 20 November 1962, high water on the Skagit River breached the same levee at a point about one-quarter mile downstream from the previous breach. The cause of the new breach is not known; however, the levee was not overtopped. The breach is about 250 feet long, 20 feet deep and is partially filled with water. The levee below and above the breach was not damaged. The breach resulted in inundating a county road and about 500 acres of pasture land to depths of 2 to 5 feet. The pasture land is worth about \$500 per acre.

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5. Remedial measures would consist of reconstructing about 250 feet of levee, substantially as shown on inclosed plan. Experience by this office indicates that it is necessary to preserve the integrity of the repaired section by making it about 2 feet higher than the adjacent levee. The adjacent seasoned and sodded levee will withstand overtopping much better than the repaired section without any sod protection. The additional 2 feet in height, therefore, is considered to be a minor improvement which would prevent overtopping and preserve the integrity of the recommended repairs and lessen subsequent Federal expense. Following is an estimate of cost based on a reconnaissance survey and the inclosed preliminary drawing:

Federal Costs

Common Fill - 7,200 cu. yds. @ 2.50	18,000
Dewatering 1 job	300
Slope existing dike 1 job	300
Stripping - 6,000 S.Y. @ 0.30	1,800
Contingencies 25%	5,100
Engineering 15%	3,800
SIOH 10%	<u>2,700</u>
Total Federal Costs	32,000

Local Costs

Royalty on borrow material 7,200 Cy. yds. @ 0.10	720
Rights of Way 1 acre @ 300	300
Engineering and Legal	<u>280</u>
	1,300

Total Cost - \$33,300

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6. In its present condition, the levee affords no protection against higher river stages, which might occur at any time during the winter months from storm rainfall and occur almost every spring from snowmelt. As pointed out above, a relatively minor flood of 20 November 1962 inundated an area of 500 acres to depths from 2 to 5 feet and inundated a county road. Deposition of gravel, snags, logs and other debris occurs over an area of 200 acres. The annual damage to the farm land averages \$40.00 per acre over an area of 500 acres, making a total agricultural damage of \$20,000. Traffic interruptions and damage to the county road is estimated at \$500 per year. The recommended repairs, therefore, are well justified economically. In view of the foregoing, it is recommended that local participation be limited to the usual a.b.c. items of local cooperation and to furnishing of the borrow material.

7. We are fully satisfied that: (a) Skagit County is legally responsible, financially capable and willing to cooperate to the necessary degree and that it understands its responsibilities; (b) there is no deferred maintenance involved; (c) the failure of the levee was not due to the negligence of local interests; (d) local maintenance has been satisfactory; (e) repair of the failure is well justified; and (f) the repair is eligible under the provisions of Public Law 99. It is therefore recommended that funds and work allowance for \$32,000 be allocated under the provisions of Public Law 99 contingent on local interests furnishing the usual a.b.c. items of local cooperation and the borrow material.

8. As Skagit County is a depressed area and the recommended construction is a matter of urgency, authority is requested to accomplish the work by hired labor and rented equipment.

FOR THE DISTRICT ENGINEER:

1 Incl (trip)  
Dwg E-6-6-174  
in 2 shts

*C. C. Templeton*  
C. C. TEMPLETON  
Acting Deputy District Engineer

County of Skagit, State of Washington

IN THE MATTER OF FLOOD CONTROL ON SKAGIT) RESOLUTION TO  
CREEK ) ASSUME OBLIGATIONS  
RIVER in SKAGIT COUNTY, WASHINGTON) OF LOCAL COOPERATION

WHEREAS, The United States has made available funds for a project for flood control on Skagit ~~CREEK~~ River, in Skagit County, Washington, substantially as shown on Drawing No. 1/, in \_\_\_\_\_ sheets, dated \_\_\_\_\_, attached hereto and made a part hereof; and

1/ Will be furnished when it becomes available.

WHEREAS, In accordance with the provisions of the Flood Control Act, approved 22 June 1936, as amended (33 USC Section 701c), and pertinent administrative determinations such funds cannot be used until a responsible local agency has given assurances satisfactory to the Secretary of the Army that it will:

- a. Furnish without cost to the United States all lands, easements, rights-of-way, and rights-of-entry, and perform all necessary alterations to utilities;
- b. Hold the United States free from any claims for damages arising out of the construction;
- c. Maintain and operate the project works, after construction;
- d. ~~Assume all costs in excess of \$50,000, tentatively estimated to~~ Contribute in cash the sum of \$40,000, and
- e. In addition, furnish the rock blasted and sized on the quarry floor and the borrow pit royalty.