

# Final Report On 2-27- Erosion Study Is 55- Expected July 1

The army engineers' two-year study of erosion along the Santa Cruz county shoreline is nearing completion and a final report will be submitted to Washington "on or about" next July 1, it was learned Friday.

This information was contained in a letter received Friday by former State Senator Ray Judah from Col. John A. Graf, district engineer for the army engineers' San Francisco district.

The letter, in the nature of a progress report, was prompted by a query from Judah on the state of the survey. Graf disclosed that compilation of data on beach erosion, wave action and geologic strata has been completed and that aerial photographs have been taken of the county shoreline.

Under current consideration, Graf wrote, are "various plans for protecting critical localities in the problem area." The final report will be made to the chief of engineers around July 1.

Judah was a prime mover in getting the army engineers interested in the project and in financing it. The survey cost \$34,000—\$2000 in city funds and \$6000 in county funds with the balance coming from the state and federal governments.

While the project embraces the county shoreline from the San Mateo line to the Pajaro river, the army considers the stretch from the northwest corner of Santa Cruz city to Rio del Mar of critical importance.

Copies of Graf's report have been forwarded by Judah to City Manager Robert Klein and Chairman Gus Wahlberg of the county board of supervisors. The full text of Graf's letter follows:

"In reply to your letter of 17 February 1955 regarding the present status of the Santa Cruz co-operative beach erosion control study, a summary of the work accomplished to date is contained in paragraphs which follow. For convenience the summary is given by work items as outlined in

paragraph 3 of Appendix III to the basic contract for the study between the United States and the State of California.

"1. Beach profiles. Beach profile field measurement and remeasurement have been completed. The field measurements have been plotted. The work remaining to be done consists of analysis of the measurements for profile slopes and correlation of the changes indicated with wave exposure as determined from wave refraction diagrams.

"2. Geologic study. Geologic field work has been completed and samples of beach and cliff material obtained during the field investigation have been analyzed for grain size and mineral content. A draft of the geologic section of the report has been completed.

"3. Wave studies. Wave data have been compiled and analyzed. Refraction diagrams have been constructed for all waves with characteristics considered to have an effect on the shore processes in the vicinity of Santa Cruz. Analysis of these diagrams is in progress and should be completed shortly.

"4. Aerial photographs. Vertical aerial photography of the Santa Cruz county shoreline has been completed at a scale of 1:10,000. In addition, ground photographs have been taken of practically all existing shore-protective structures along the Santa Cruz shoreline.

"5. Assembling data. Basic data have been compiled and utilized in preparation of various sections of the report. A study of the historical changes in the shoreline and offshore depths as compiled from previous surveys has been completed.

"In addition to the foregoing, various plans for protecting critical localities in the problem area are now being considered. Their benefits and costs involved in such plans remain to be determined. Additional field investigations to determine suitable sources of construction materials may be necessary in connection with the determination of the feasibility of the plans of improvement being considered.

"As presently scheduled, a final report on the erosion control study will be submitted to the chief of engineers on or about 1 July 1955.

"I trust the foregoing information will be sufficient for your present needs in the matter. Should you desire additional or related information, please feel free to call on me."

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