

EXHIBIT G

SPKGD 800.12

26 September 1955

SUBJECT: Interior Drainage in Local Protection Projects

TO: Division Engineer
South Pacific Division
Corps of Engineers, US Army
San Francisco, California

1. Information requested in OCE red-bordered letter, 30 August 1955, subject as above, and SPD letter, 9 September 1955, same subject, is given herein:

CURRENT PRACTICE IN SACRAMENTO DISTRICT

2. Criteria for inclusion of interior drainage. - Interior drainage is provided when natural drainage is prevented by project works. Interior drainage is generally classified as follows:

- a. Gravity outlets through levees.
- b. Pumping plants through levees.
- c. Interior drainage works.

Gravity outlets and pumping plants are generally built and paid for by the Federal Government. Interior drainage works (collection system) are built and paid for by local interests. Exceptions to this general procedure have occurred in the past, particularly with regard to the Sacramento River Old Project which has been under construction for many years, and the component parts of which have been built under laws specifying different requirements of local cooperation. There is inclosed a tabulation showing our interpretation of current O&R instructions as well as the practice followed (or proposed to be followed) in this District on drainage problems of the Sacramento River Flood Control Project, Sacramento River Major and Minor Tributaries, American River Levee, and San Joaquin River Levee Project. Interior drainage is subject to the same economic analysis as any other component part of the project. The degree of protection provided is governed by the same economic factors.

3. Cost-sharing arrangements. - Collecting systems (except main intercepting ditches) are normally paid for by local interests; gravity outlets through levees or pumping plants through levees are normally paid

SPKGD 800.12

SUBJECT: Interior Drainage in Local Protection Projects

for by the Federal Government. Exceptions to this general rule have occurred, particularly in the Sacramento River Flood Control Project, in order to maintain consistency with past arrangements for the same project or general area. For instance, pumping plants required in connection with the levees proposed in the Chico Landing to Red Bluff Report of the District Engineer (the levees were subsequently deleted by the Division Engineer) were charged to local interests, whereas the pumping plant required for the authorized American River levee is considered to be a Federal responsibility. See tabulation in inclosure 1.

RECOMMENDATIONS FOR UNIFORM POLICY

4. Criteria for inclusion in future reports. - Interior drainage should be provided when natural drainage is prevented by project works and when found to be economically justified. The economic analysis should be conducted by following the same principles and concepts as are used for any other component part of the project. When practicable, the incremental method of analysis should be used. The degree of protection or improvement provided should vary with the character and nature of the improved area. Interior drainage works (Collection system) should normally be built and paid for by local interests, the cost thereof to be deducted from project benefits. Gravity outlets through project levees or pumping plants to pass drainage water through or over project levees should be built by Federal Government.

5. Cost-sharing arrangements. - Interior drainage works (Collection system) should be paid for by local interests. Gravity outlets or pumping plants should be paid for by the Federal Government, the cost thereof to be distributed in the same manner as the cost of the levee and other items built by the Federal Government. Local interests would, of course, contribute the necessary rights-of-way for construction and pondage as in other items of work. With regard to the method of distributing the construction cost incurred by the Federal Government the following comments are considered pertinent:

a. Flood control, land enhancement, and drainage benefits are very difficult to separate, since all such benefits are reflected in increased property values. The dividing line is largely imaginary and subject to judgment interpretations. For this reason, it is recommended that the same formula be applied to the three types of benefits.

b. In any division of cost formula that may be developed, the capitalized value of maintenance and operation cost should be fully taken into account, as is done in the current "drainage formula," rather than ignored as is done in the current "land enhancement formula."

c. The cost of lands, utility relocations, etc. paid for by local

SPKGD 800.12

SUBJECT: Interior Drainage in Local Protection Projects

interests, (except the cost of such interior drainage works as are a part of the project only in that the cost thereof was deducted from the benefits) should be fully taken into account in any division of cost formula that may be developed, as is presently done in the current land enhancement and drainage formulas.

d. The division of cost formula should be simple and uniform for all projects, and should be independent of the breakdown of benefits into flood control, land enhancement, and drainage. Thus, the formula should be of this type:

Construction cost (Federal)	= A
Cost of lands, utilities, etc. (non-Federal)	= B
Capitalized value of M&O (non-Federal)	= C
Total project cost	= $A+B+C$
Non-Federal share	= $k \frac{A+B+C}{A+B+C}$
Non-Federal cash contribution to construct cost	= $k \frac{A+B+C}{A+B+C} - \frac{B+C}{A+B+C}$

The value of "k" should be same for all local protection projects. A value of 0.50 is suggested as being appropriate. The non-Federal cost should in no case be less than $\frac{B+C}{A+B+C}$.

6. Recognition to future expansion. - When future expansion in urban areas can be anticipated with a reasonable degree of accuracy, and protection therefor is found to be economically justified, it should be provided. The degree of protection to be provided should be governed by economic considerations as well as by the nature and character of the area to be protected.

7. Special consideration. - Local interior drainage to prevent ponding or to lower the groundwater table should be built and paid for entirely by local interests. Such improvements should be made a part of the project only in that the cost thereof should be deducted from the project benefits.

20 September 1955

Division of Costs
 Drainage Works Supplemental to Levee Construction

Feature	: Orders		: Sacramento River: Major and Minor		: San Joaquin River: American River	
	:& Regulations:	F.C. Project	:Trib. Project(1)	:and Trib. Project(1)	:and Trib. Project(1)	:Right Bank Levee
	:Fed.:Non-Fed.:	Fed.:	Non-Fed.:	Fed.:	Non-Fed.:	Fed.:
Replacement of Existing Facilities						
Gravity Outlets thru Levees	x	x	x (3)	x	x	x
Pumping Plants thru Levees	x	x	x (3)	x	x	x
Interior drainage works						
Main Intercepting ditches	x	x	x (3)	x	x	x
Collection ditches or systems	x	x	x	x	x	x
Construction of New Facilities						
Gravity Outlets thru Levees	x	x	x	x	x	x
Pumping Plants thru Levees	x	(2)	x	x	x	x
Interior drainage works						
Main Intercepting ditches	x	(2)	x	x	x	x
Collection ditches or systems	x	x	x	x	x	x

- NOTES: (1) A part of Sacramento River F. C. Project but carried separately for budgetary purposes.
 (2) Determined jointly with local interests in each case, as condition develops.
 (3) On work completed to date, these features were carried as a Federal cost.