

# CALIFORNIA

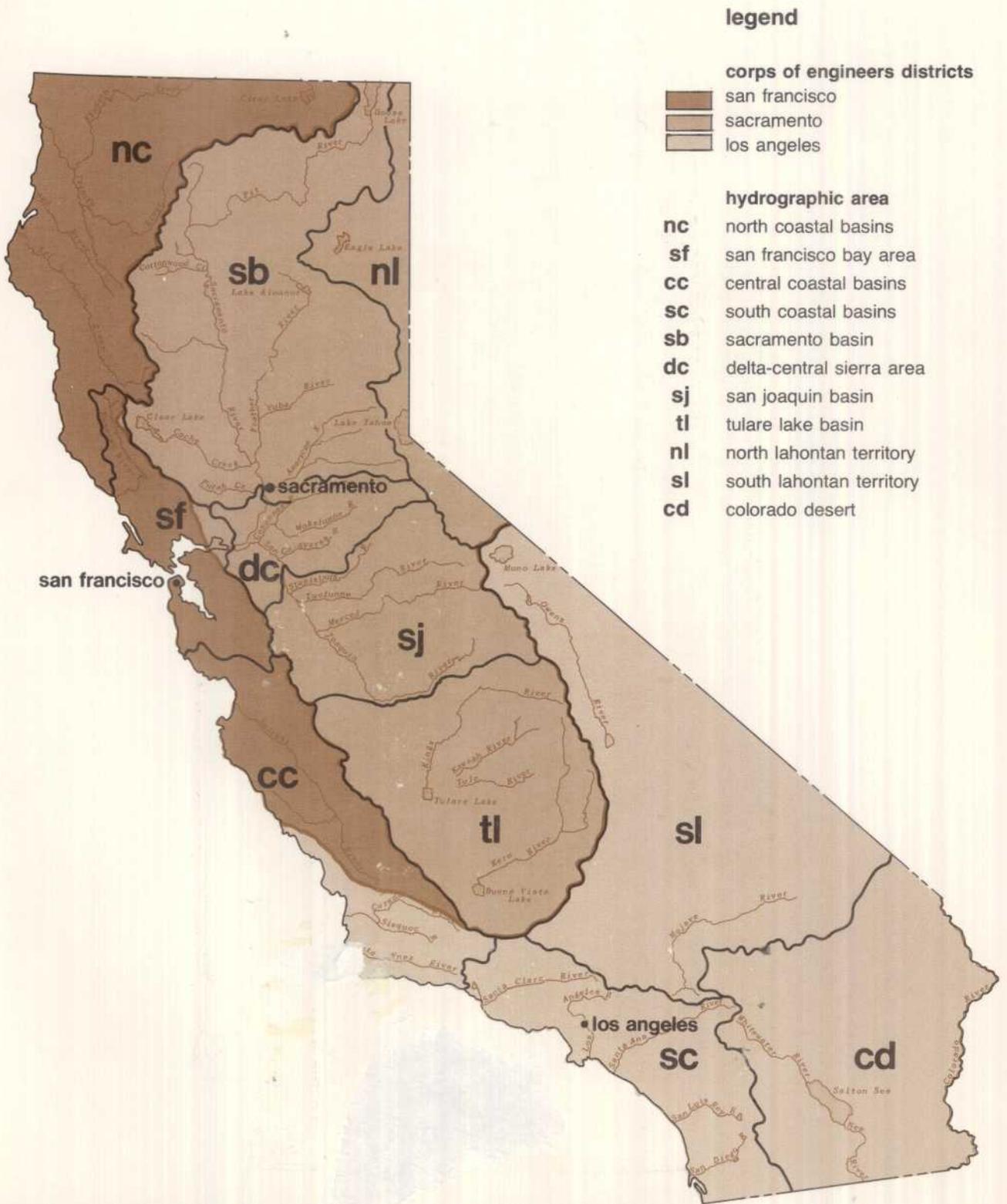
## WATER RESOURCES DEVELOPMENT



U.S. ARMY CORPS OF ENGINEERS



# california waterways, hydrographic areas and corps of engineers districts



# water resources development



## u.s. army corps of engineers

in **california**

1977

Division Engineer  
South Pacific Division  
Corps of Engineers

630 sansome street  
san francisco, california 94111

District Engineer  
San Francisco District  
Corps of Engineers

211 main street  
san francisco, california 94105

District Engineer  
Sacramento District  
Corps of Engineers

650 capitol mall  
sacramento, california 95814

District Engineer  
Los Angeles District  
Corps of Engineers

300 north los angeles street  
los angeles, california 90012  
(p.o. box 2711, los angeles, california 90053)

## u.s. army corps of engineers

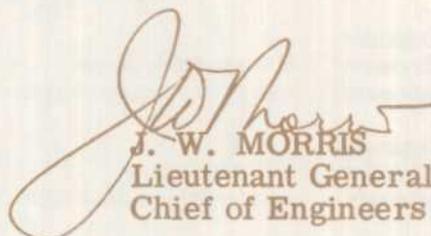
### TO OUR READERS:

Throughout history, water has played a dominant role in shaping the destinies of nations and entire civilizations. The early settlement and development of our country occurred along our coasts and water courses. The management of our land and water resources was the catalyst which enabled us to progress from a basically rural and agrarian economy to the urban and industrialized nation we are today.

Since the General Survey Act of 1824, the US Army Corps of Engineers has played a vital role in the development and management of our national water resources. At the direction of Presidents and with Congressional authorization and funding, the Corps of Engineers has planned and executed major national programs for navigation, flood control, water supply, hydroelectric power, recreation and water conservation which have been responsive to the changing needs and demands of the American people for 152 years. These programs have contributed significantly to the economic growth of our country and to the well-being of the American people.

Today, the activities of the Corps of Engineers in water resources management, under the direction of the Executive and Legislative branches of the Federal government, continue to support national goals and objectives. These include conservation of our water resources, protection of our wetlands, non-structural solutions to flood-damage control problems, total water management in metropolitan areas, flood plain management, and the preservation and enhancement of the quality of our environment for future generations.

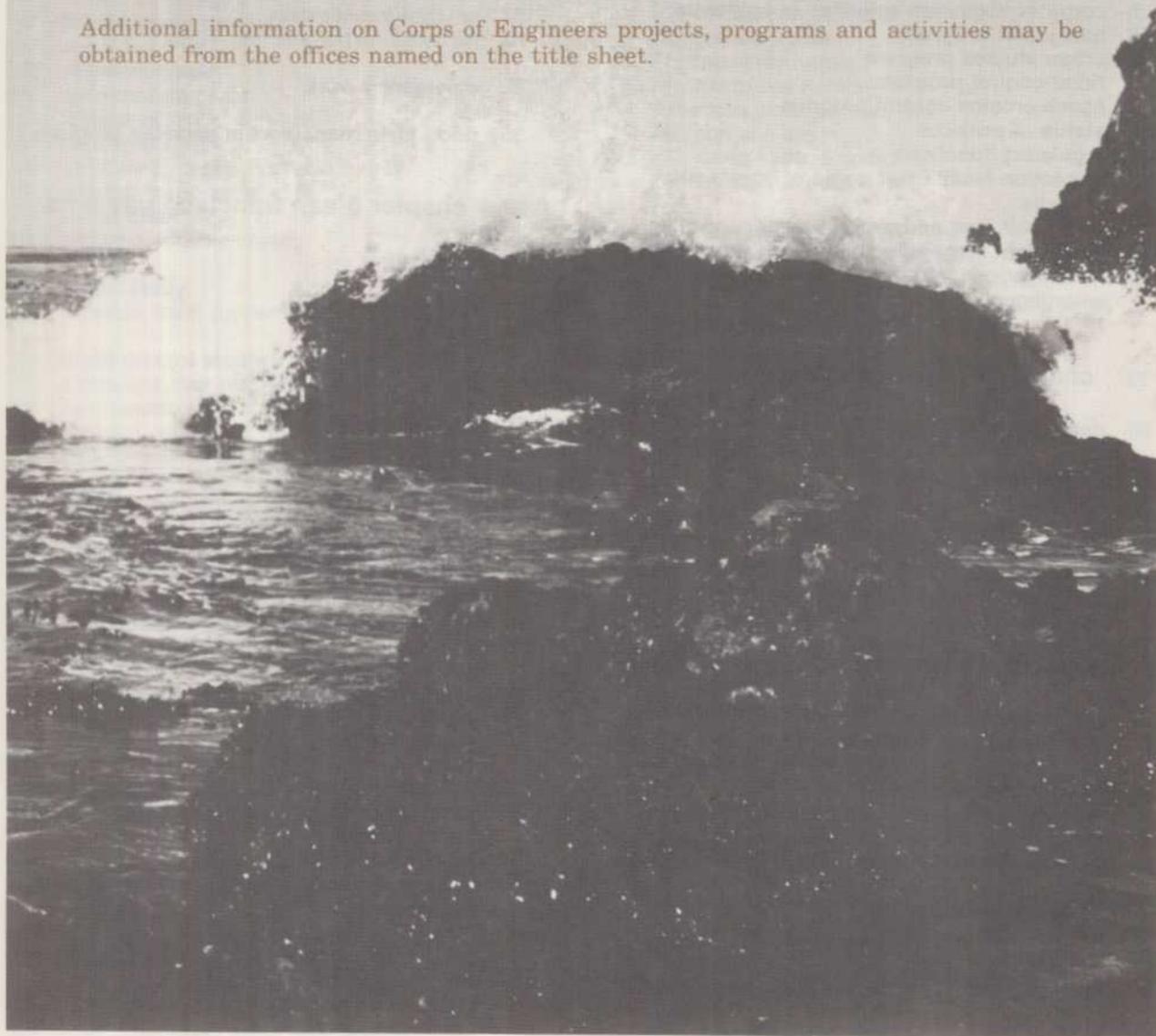
This booklet describes the past, current, and proposed activities of the Corps of Engineers in your state. I trust that you will find it informative, interesting, and useful.

  
J. W. MORRIS  
Lieutenant General, USA  
Chief of Engineers



This booklet is prepared biennially to provide information on accomplishments of the Corps of Engineers and on the scope and progress of current programs. It contains information on the role of the Corps in planning, constructing and operating water resources development projects; on general investigation studies; on projects that are completed, under construction or in the planning stage; and on Corps of Engineers authorities for participating in water resources development. Data on investigations and projects are grouped by hydrographic areas of California, which have been selected on the basis of major drainage patterns.

Additional information on Corps of Engineers projects, programs and activities may be obtained from the offices named on the title sheet.



# table of contents

## page

### Foreword

## 1 chapter 1 water resources development by the corps of engineers in california

- 1 introduction
- 5 hydrographic areas of california
- 6 corps of engineers activities in california
- 6 navigation program
- 6 urban studies program
- 7 flood control program
- 7 beach erosion control program
- 7 status of projects
- 7 regulatory functions
- 8 recreation facilities at corps of engineers projects
- 8 water pollution and water quality control
- 9 flood plain management services program
- 9 investigations and reports program
- 11 emergency work

## 19 chapter 2 north coastal basins

### 20 description

#### 22 navigation projects

- 22 prefatory note
- 23 crescent city harbor
- 23 humboldt harbor and bay
- 25 noyo river and harbor

#### 26 navigation study

- 26 coast of northern california, harbors for light draft vessels

#### 26 multipurpose project

- 26 butler valley dam and blue lake project

#### 26 flood control projects

- 26 eel river, sandy prairie and delta area
- 27 klamath river at and in the vicinity of klamath
- 30 redwood creek, humboldt county

#### 30 flood control study

- 30 northern california streams
- 30 mad river basin
- 30 russian river basin

#### 30 small flood-control projects

## page

- 30 east weaver creek, trinity county

- 30 mad river at blue lake

## 31 beach erosion control and shore protection project

- 31 buhne point, humboldt bay

## 31 special investigations

- 31 coast of california, protection against storm and tidal waves
- 31 eel river investigation
- 32 humboldt harbor and bay

## 32 emergency work

## 35 flood plain management services program

## 37 chapter 3 san francisco bay area

### 39 description

#### 41 navigation projects

- 41 prefatory note
- 42 bodega harbor
- 42 half moon bay harbor
- 43 napa river
- 43 oakland harbor
- 45 petaluma river
- 45 redwood city harbor
- 46 richmond harbor
- 48 san francisco bay to stockton
- 49 san francisco harbor
- 50 san francisco harbor and bay, collection and removal of drift
- 51 san leandro marina (maintenance)
- 51 san leandro marina (breakwater)
- 51 san pablo bay and mare island strait
- 52 san rafael creek
- 52 suisun bay channel
- 52 suisun channel

#### 52 navigation studies

- 52 coast of northern california, harbors for light draft vessels
- 52 fisherman's wharf
- 53 san francisco bay and tributaries, deep water ports (dredging)

#### 54 small navigation projects

- 54 berkeley harbor
- 54 gas house cove (east harbor facility, san francisco marina)

**page**

54	suisun point channel
54	islais creek
<b>54</b>	<b>multipurpose projects</b>
54	dry creek (warm springs) lake and channel
55	knights valley lake
55	lake mendocino (coyote valley dam) and russian river channel
<b>57</b>	<b>flood control projects</b>
57	alameda creek
58	alhambra creek
58	corte madera creek
59	fairfield vicinity streams
60	napa river basin
60	san lorenzo creek, alameda county
60	sonoma creek basin
60	walnut creek
62	wildcat-san pablo creeks
<b>62</b>	<b>urban study</b>
62	alameda creek (upper basin) urban study
<b>63</b>	<b>flood control studies</b>
63	guadalupe river and adjacent streams
63	san francisco bay shoreline
63	northern california streams
63	novato creek and tributaries
<b>63</b>	<b>small flood-control projects</b>
63	coyote creek, marin county
64	green valley creek, solano county
64	pinole creek, contra costa county
64	rheem creek
64	rodeo creek, contra costa county
64	san leandro creek
<b>64</b>	<b>beach erosion control and shore protection study</b>
64	alameda memorial state beach
<b>65</b>	<b>shore and hurricane protection</b>
65	shores of the city of alameda
<b>65</b>	<b>special investigations</b>
65	coast of california, protection against storm and tidal waves
65	san francisco bay area (in-depth study)
65	san francisco bay and sacramento-san joaquin delta water quality and waste disposal
67	san francisco bay and tributaries
68	west coast deep water port facilities

**page**

70	<b>emergency work</b>
70	<b>flood plain management services program</b>
<b>71</b>	<b>chapter 4 central coastal basins</b>
72	<b>description</b>
<b>73</b>	<b>navigation projects</b>
73	prefatory note
74	monterey harbor
74	morro bay harbor
75	moss landing harbor
76	port san luis
77	santa barbara harbor
78	santa cruz harbor
<b>78</b>	<b>navigation studies</b>
78	coast of northern california, harbors for light draft vessels
<b>79</b>	<b>flood control projects</b>
79	goleta and vicinity
79	pajaro river basin project
79	salinas river basin project
80	san lorenzo river, santa cruz county
80	santa maria river basin project
<b>81</b>	<b>urban study</b>
81	salinas river
<b>81</b>	<b>flood control studies</b>
81	carmel river and tributaries
81	san luis obispo county
<b>82</b>	<b>beach erosion control and shore protection project</b>
82	santa cruz county
<b>82</b>	<b>special investigation</b>
82	coast of california, protection against storm tidal waves
<b>82</b>	<b>emergency work</b>
84	<b>flood plain management services program</b>
<b>85</b>	<b>chapter 5 south coastal basins</b>
87	<b>description</b>

# table of contents

## page

90	<b>navigation projects</b>
90	prefatory note
90	channel islands harbor
91	dana point harbor
93	los angeles and long beach harbors
95	marina del rey
95	san diego river and mission bay harbor
96	newport bay harbor
97	oceanside harbor
98	port hueneme harbor
99	redondo beach king harbor
100	san diego harbor
101	ventura marina
103	<b>navigation studies</b>
103	north coast of los angeles county
103	san pedro ports
103	sunset harbor
103	west newport marina
104	<b>multipurpose projects</b>
104	los angeles county drainage area project
106	hansen dam
106	lopez dam
106	santa fe dam
106	sepulveda dam
107	whittier narrows dam
110	<b>multipurpose and flood control projects in santa ana river basin and orange county</b>
110	brea dam
111	carbon canyon dam and channel
112	cucamonga creek and tributaries project
113	fullerton dam
113	santa ana river main stem, including santiago creek and oak street drain
113	mentone dam
113	prado dam
116	santa ana river
116	santiago creek channel
116	oak street drain
117	<b>flood control projects in santa ana river basin and orange county</b>
117	devil, east twin, and warm creeks channel improvements and lytle creek levee
117	lytle and cajon creeks channel improvements
117	lytle and warm creeks project
118	mill creek levees
118	riverside levees
118	san antonio and chino creeks channel
118	san antonio dam

## page

119	san jacinto river levee and bautista creek channel
119	<b>santa ana river and orange county projects</b>
119	<b>inactive projects:</b>
119	aliso creek, san juan, trabuco, and villa park dams
119	university wash and spring brook project
119	<b>multipurpose and flood control studies in santa ana river basin and orange county</b>
119	<b>studies:</b>
119	general
120	investigation of temescal and san timoteo creeks
120	investigation of coyote creek and tributaries
120	<b>cooperative project</b>
	hodges dam
120	<b>other flood control projects</b>
120	calleguas creek from simi valley to moorpark
121	kenter canyon conduit and channel
121	san diego river levee and channel improvements
121	san diego river (mission valley) project
121	san luis rey river project
122	santa clara river levee
122	santa paula creek channel and debris basins
123	stewart canyon debris basin and channel
123	sweetwater river project
124	tijuana river international flood control project
124	ventura river levee
125	<b>flood control studies</b>
125	dominguez channel
125	san diego county streams flowing into the pacific ocean
125	santa clara river and tributaries
125	ventura river
125	<b>small flood-control projects</b>
125	city creek levee
125	rose creek channel
126	<b>beach erosion cogtrol and shore protection projects</b>
126	prefatory note
126	anaheim bay harbor
126	doheny state beach
127	imperial beach ..
127	ocean beach
127	oceanside

<b>page</b>		<b>page</b>	
127	point mugu to san pedro breakwater	157	<b>flood control projects</b>
129	san buenaventura state beach	157	american river levee
129	san diego (sunset cliffs)	158	chester, north fork of feather river
131	san gabriel river to newport bay, orange county	159	middle creek improvement, lake county
131	<b>beach erosion control and shore protection study</b>	159	sacramento river and major and minor tributaries
131	ventura county	160	sacramento river bank protection
133	<b>small beach erosion control and shore protection projects</b>	161	sacramento river, chico landing to red bluff
133	bird rock area of la jolla	161	sacramento river flood control project
133	las tunas beach park	162	<b>flood control studies</b>
133	<b>small beach erosion control and shore protection project study</b>	162	northern california streams
133	royal palms beach park (point fermin cliffs)	163	cache creek basin
134	<b>special investigations</b>	163	sacramento river and tributaries, red bluff to shasta dam
134	coast of california, protection against storm and tidal waves	163	stony creek
134	pacific palisades area	163	sacramento river and tributaries, bank protection and erosion control
136	<b>emergency work</b>	163	upper putah creek
140	<b>flood plain management services program</b>	163	<b>small flood-control projects</b>
141	<b>chapter 6 sacramento basin</b>	163	churn creek, shasta county
143	<b>description</b>	164	north fork pit river at alturas
144	<b>navigation projects</b>	164	hat creek, shasta county
144	feather river	164	<b>debris control facilities</b>
145	sacramento river, shallow draft channels	164	harry l. englebright lake, yuba river
145	sacramento river deep water ship channel	165	north fork lake, north fork, american river
148	<b>navigation study</b>	165	yuba river restraining barriers
148	sacramento valley navigation	166	<b>emergency work</b>
148	<b>multipurpose projects</b>	170	<b>flood plain management services program</b>
148	black butte lake	171	<b>chapter 7 delta-central sierra area</b>
149	bear river	172	<b>description</b>
150	cottonwood creek	173	<b>navigation projects</b>
151	folsom lake	173	middle river and connecting channels
152	lakeport lake	173	mokelumne river
153	marysville lake	173	old river
155	morrison creek stream group	173	sacramento river deep water ship channel
155	<b>cooperative projects</b>	173	san francisco bay to stockton
156	lake oroville	173	san joaquin river, stockton deep water channel and burns cutoff
157	new bullards bar reservoir	174	stockton and mormon channels (diverting canal)
157	shasta lake	174	<b>multipurpose project</b>
		174	new hogan lake
		175	<b>cooperative project</b>
		175	camanche reservoir

# table of contents

page		page	
176	<b>flood control projects</b>	194	<b>multipurpose projects</b>
176	bear creek channel, san joaquin county	194	isabella lake
176	farmington dam	195	pine flat lake and kings river
177	lower san joaquin river and tributaries	196	success lake
177	mormon slough, calaveras river	197	terminus dam (lake kaweah)
177	<b>flood control study</b>	198	<b>flood control project</b>
177	sacramento-san joaquin delta	198	big dry creek dam and diversion
178	<b>small flood-control project</b>	198	<b>flood control studies</b>
178	duck creek, san joaquin county	198	san joaquin river basin
178	<b>special investigation</b>	198	coalinga stream group
178	san francisco bay and sacramento-san joaquin delta water quality and waste disposal	198	isabella lake
178	<b>emergency work</b>	198	red bank and fancher creeks
180	<b>flood plain management services program</b>	198	<b>small flood-control project</b>
181	<b>chapter 8 san joaquin basin</b>	198	kern river — california aqueduct intertie
182	<b>description</b>	199	<b>emergency work</b>
183	<b>navigation project</b>	200	<b>flood plain management services program</b>
183	san joaquin river, stockton deep water channel and burns cutoff	201	<b>chapter 10 north lahontan territory</b>
183	<b>multipurpose projects</b>	202	<b>description</b>
183	buchanan dam (h. v. eastman lake)	203	<b>multipurpose project</b>
184	hidden dam (hensley lake)	203	martis creek lake
185	merced county streams	204	<b>cooperative project</b>
186	new melones lake	204	truckee river reservoirs
188	<b>cooperative projects</b>	204	<b>flood control project</b>
188	millerton lake (friant dam)	204	truckee river and tributaries, california and nevada
188	new exchequer reservoir	204	<b>emergency work</b>
189	tuolumne river reservoirs project	206	<b>flood plain management services program</b>
189	<b>flood control project</b>	207	<b>chapter 11 south lahontan territory</b>
189	lower san joaquin river and tributaries	208	<b>description</b>
190	<b>flood control study</b>	209	<b>multipurpose project</b>
190	san joaquin river basin	209	mojave river dam
191	<b>emergency work</b>	211	<b>flood control study</b>
192	<b>flood plain management services program</b>	211	antelope valley streams
193	<b>chapter 9 tulare lake basin</b>	211	<b>small flood-control project</b>
194	<b>description</b>		

<b>page</b>	
211	oro grande wash channel, victorville
211	<b>emergency work</b>
212	<b>flood plain management services program</b>
<b>213</b>	<b>chapter 12 colorado desert</b>
214	<b>description</b>
215	<b>flood control projects</b>
215	tahchevah creek detention basin and channel improvements
216	tahquitz creek
216	<b>flood control study</b>
216	whitewater river
217	<b>small flood-control projects</b>
217	banning levee
217	chino canyon improvements
217	needles, san bernardino county
217	quail wash levee
218	<b>small flood-control project study</b>
218	yucca valley, san bernardino county
218	<b>emergency work</b>
218	<b>flood plain management services program</b>
<b>219</b>	<b>chapter 13 the corps of engineers civil works program</b>
219	<b>general information</b>
219	<b>authority for corps of engineers participation in civil works</b>
220	navigation projects
221	flood control projects
221	beach erosion control projects
222	projects approved by the public works committees
222	regulation of hydraulic mining
223	recreation
224	water pollution and water quality control
224	development of water supplies
224	flood plain management services program
224	flood plain information reports
224	technical assistance and guidance
224	guidance materials and research
225	flood plain management planning

<b>page</b>	
225	special authorities
225	small projects
225	emergency flood control work
226	emergency navigation work
226	emergency rehabilitation work under public law 93-288
226	reevaluation of completed projects
226	cooperative projects
227	regulatory functions
227	cargo statistics
<b>227</b>	<b>initiation, authorization and construction of corps of engineers projects</b>
<b>228</b>	<b>local interests' share in federal projects</b>
<b>229</b>	<b>index</b>

