

# Lower Yolo Bypass

Historic Framework



# Summary

- 19<sup>th</sup> Century Motivation
- Early Proposals
- The 1917 Authorization
- Historic Sacramento River Flows
- The Future



# Driving Forces

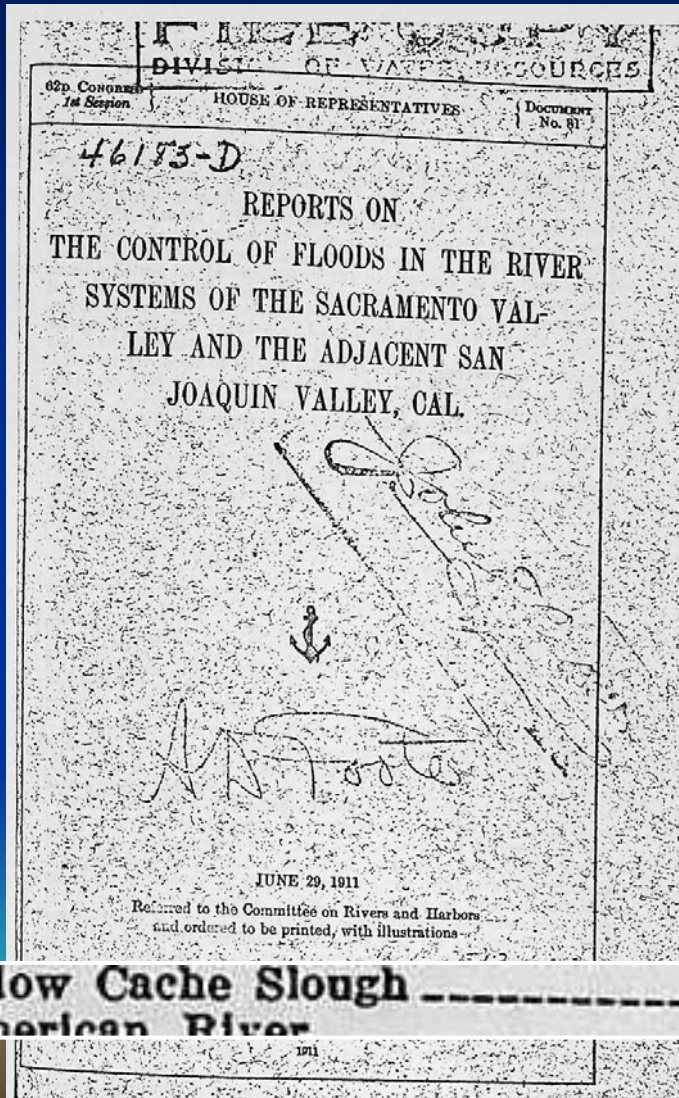
- Floods of 1861-62, 1868 and 1874 ect.
  - Direct flood damage to Valley farms
  - Loss of bottomland and increased flooding due to mining debris
  - Navigation impacted by mining debris
- 1884 North Bloomfield Injunction shut down hydraulic mining



# Early Proposals

1867	Will Green, Colusa Sun editor / state legislator	Levees and bypasses
1870	BG Barton Alexander COE	Levees Only
1880	William Ham. Hall	Debris dams, levees, escape ways
1888	Biggs Commission → CA Debris Commission	Debris dams, navigation
1894	Manson & Grunsky	Valley wide plan, levees and bypass
1904	Dabney Commission COE	240 kcfs levees only
1911	Jackson Report CDC-COE	600 kcfs SRFCP

# 1917 Sacramento River FCP



FLOOD CONTROL. 19

considered that provision should be made for the following discharges:

	Cubic feet per second.
Sacramento River below Stony Creek	250,000
Stony Creek	30,000
Sacramento River at Moulton Weir	250,000
In river to Tisdale Weir	65,000
In river from Tisdale Weir to Feather River	30,000
Tisdale by-pass	35,000
Sutter-Butte by-pass	185,000-220,000
Feather River above Marysville	150,000
Yuba River	110,000
Bear River	30,000
Feather River below Marysville	240,000
Yolo by-pass at spillway	400,000
Yolo by-pass below Colusa Basin Canal	410,000
Yolo by-pass below Cache Creek	425,000
Yolo by-pass below American by-pass	490,000
Yolo by-pass below Putah Creek	510,000
From Feather River to American River	50,000
From American River to Cache Slough	100,000
Below Cache Slough	600,000
American River	120,000
Colusa Basin Canal	10,000
Cache Creek	20,000
Putah Creek	25,000
Sacramento by-pass	70,000

65. The above discharges are large and much larger than many may consider it advisable to provide for. The floods considered, however, were of long duration and but little reduction can be allowed for the flattening of the flood wave under such conditions. In the projects that have heretofore been seriously considered, the estimated flood discharges of the main river and of most of its tributaries have been abnormally low, and the possibility of even those low discharges being maintained for some days was not considered probable. The floods of 1907 and 1909 have proved conclusively that a flood in this river may continue for several days at almost the point of maximum discharge. Failure to provide for a discharge such as is shown by these floods of 1907 and 1909 would leave open the way for damage by the occurrence of a similar flood.

66. The magnitude of the maximum flood discharge of the Sacramento River may be better appreciated by comparing it with that of several well-known rivers of the United States:

River.	Drainage area above station.	Maximum flood discharge (cubic feet per second recorded).
	Square miles.	
Mississippi (at Vicksburg)	1,100,000	1,777,000
Mississippi (above Missouri River)	165,000	366,000
Missouri	527,000	1,846,000
Columbia	227,000	1,390,000

1,000,000  
800,000

Estimated, 1907-1909.


Below Cache Slough  
American River

# 1927 Sacramento River FCP

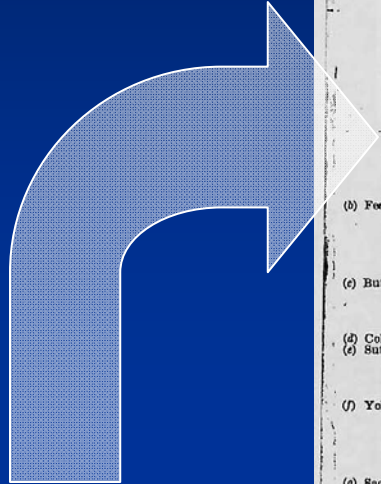
69TH CONGRESS }  
1st Session } SENATE DOCUMENTS DEPT } DOCUMENT No. 23

## FLOOD CONTROL IN THE SACRAMENTO AND SAN JOAQUIN RIVER SYSTEMS

LETTER FROM THE SECRETARY OF WAR TRANSMITTING TO THE CHAIRMAN OF THE COMMITTEE ON COMMERCE, UNITED STATES SENATE, A LETTER OF THE CHIEF OF ENGINEERS, UNITED STATES ARMY, WITH REPORTS OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS AND THE CALIFORNIA DÉBRIS COMMISSION ON THE CONTROL OF FLOODS IN THE SACRAMENTO AND SAN JOAQUIN RIVER SYSTEMS



WASHINGTON GOVERNMENT PRINTING OFFICE 1926



FLOOD CONTROL IN SACRAMENTO AND SAN JOAQUIN RIVERS 40

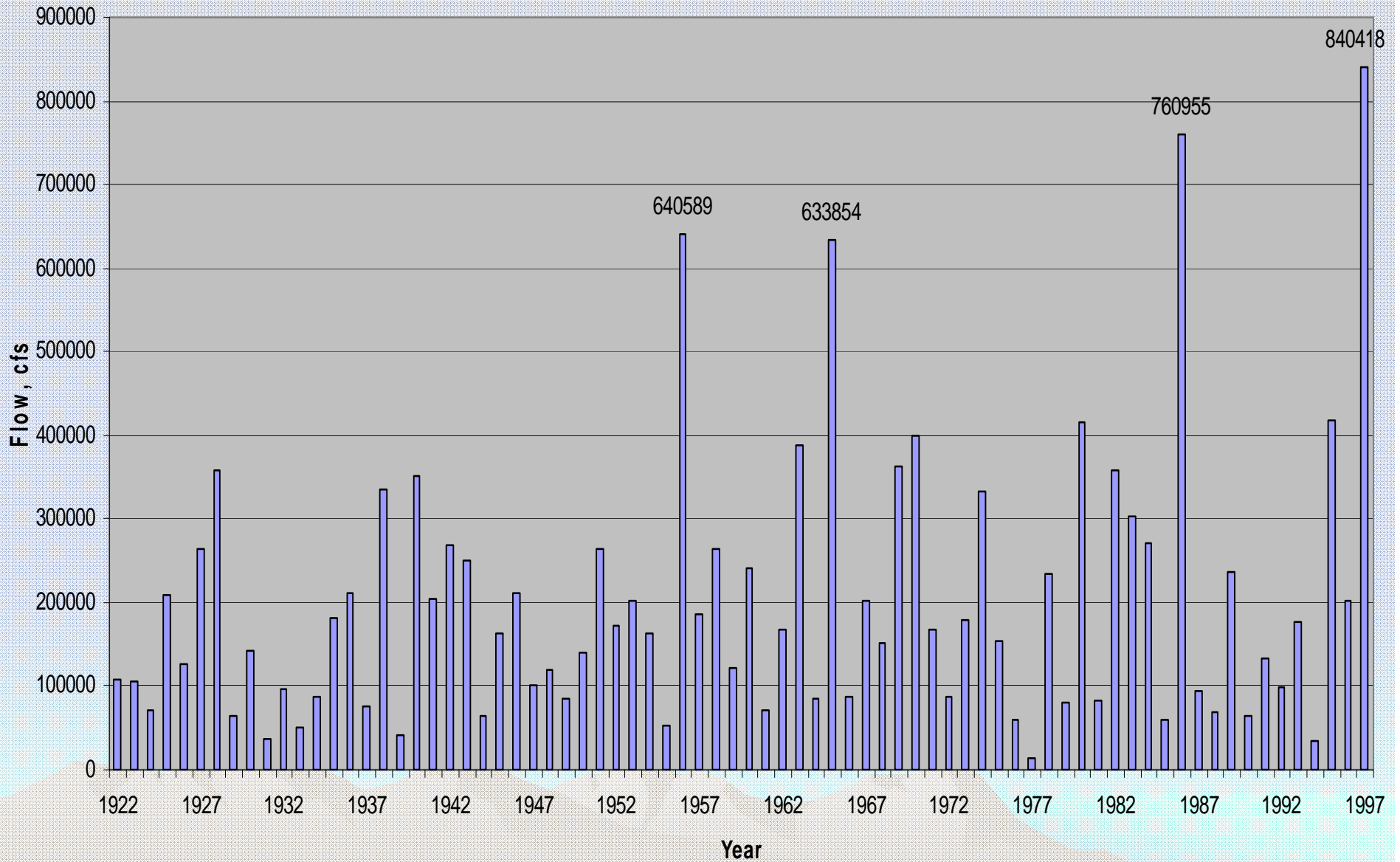
TABLE A.—Flood run-off quantities

Section of project	Original natural capacity	Capacity to be provided by existing project <sup>1</sup>	Capacity to be provided by revised project now recommended
<b>(a) Sacramento River:</b>			
Red Bluff to Chico Landing.....	Second-let 250,000	Second-let 250,000	Second-let 250,000
Chico Landing to Butte-Clenn County line.....	250,000-250,000	250,000-250,000	250,000-160,000
Butte-Clenn County line to Moulton Break.....	140,000	250,000-250,000	160,000
Moulton Break to Colusa Weir.....	100,000	65,000	145,000
Colusa Weir to Butte Slough.....	70,000-60,000	65,000	65,000
Butte Slough to Tisdale Weir.....	29,000	29,000	72,000
Tisdale Weir to Fremont Weir.....	62,000-36,000	89,000	35,500
Mouth Feather River to Sacramento Weir.....		120,000	107,000
Mouth American River to head of Sutter Slough.....	76,000	100,000	118,000
Via Sutter Slough, Sacramento River, to junction with Miner Slough.....			25,500
Via Sutter Slough, junction Miner Slough to Steamboat Slough.....			15,500
Head of Sutter Slough to Head of Steamboat Slough.....		100,000	84,500
Via Steamboat Slough to mouth of Sutter Slough.....	34,000	46,000	28,500
Via Steamboat Slough, mouth of Sutter Slough to mouth of Cache Slough.....		46,000	43,500
Head Steamboat Slough to head Georgiana Slough.....	49,000	54,000	50,500
Via Georgiana Slough.....			20,000
Head Georgiana Slough to mouth Old River.....	49,000	54,000	25,000
Mouth Old River to head Three-Mile Slough.....	300,000	600,000	579,000
Via Three-Mile Slough.....		80,000	65,000
Head Three-Mile Slough to head Mayberry Slough.....	200,000	520,000	614,000
Via Mayberry Slough.....		17,000	17,000
Head Mayberry Slough to Collinsville.....	200,000	505,000	497,000
<b>(b) Feather River:</b>			
Oroville to mouth Honcut Creek.....			150,000
Mouth Honcut Creek to Yuba River.....			150,000
Yuba River to Bear River.....			240,000
Bear River to Nelson Bend.....			250,000
Nelson Bend to mouth Feather (including Sutter By-pass).....		420,000	416,500
<b>(c) Butte By-pass:</b>			
Butte-Clenn Co. Line to Butte Creek.....			100,000
Butte Creek to Colusa By-pass <sup>2</sup> .....			110,000
Colusa By-pass to Butte Slough.....			185,000
Butte Slough to Northern Electric Ry.....			178,000
Colusa By-pass: Colusa Weir to Butte By-pass.....			80,000
<b>(d) Sutter By-pass:</b>			
Northern Electric Ry. to Tisdale By-pass.....		185,000	178,000
Tisdale By-pass to Feather River.....		220,000	216,500
Feather River (Nelson Bend) to Mouth Feather (including Feather River).....		420,000	416,500
<b>(f) Yolo By-pass:</b>			
Fremont Weir to Knights Landing Cut.....		361,000	343,000
Knights Landing Cut to Cache Creek.....		371,000	322,000
Cache Creek to Sacramento By-pass.....		356,000	377,000
Sacramento By-pass to Putah Creek.....		490,000	480,000
Putah Creek to Miner Slough.....		510,000	490,000
Miner Slough to mouth of Cache Slough.....		510,000	500,000
<b>(g) Sacramento By-pass: Sacramento River to Yolo By-pass:</b>			
(A) Tisdale By-pass: Sacramento River to Sutter By-pass.....		100,000	112,000
(B) Miscellaneous.....		35,000	38,500
<b>(i) Miscellaneous:</b>			
Wadsworth Canal.....			15,000
Butte Creek.....			1,500
Butte Slough (Butte Basin to Sacramento River).....			12,000
Miner Slough (Sutter Slough to Yolo By-pass).....			7,000

<sup>1</sup> The quantities in this column do not in all cases agree with those given in Document 81, as corrections have been made which recomputation has shown to be necessary.  
<sup>2</sup> Upstream.  
<sup>3</sup> Opposite Moulton Break Weir.  
 S. Doc. 23, 69-1—4

Mouth Old River to head Three-Mile Slough..... | 300,000 | 600,000 | 579,000

# 1 day Rain Flood Flows Sacramento River at Latitude Sacramento



# The Future ?

## Selected Yolo Bypass Flow Comparisons

Event	Location	
	Freemont Weir	Below I-5
Design	343,000	480,000
100-year <sup>(1)</sup>	411,000	549,000
200-year <sup>(1)</sup>	479,000	633,500

(1) Supplemental Report for the Design Water Surface Profile for the Natomas Levee Improvement Program, MBK Engineers, June, 2008