ENGINEER'S REPORT

TO

THE BOARD OF SUPERVISORS OF

RIVERSIDE COUNTY FLOOD CONTROL

AND

WATER CONSERVATION DISTRICT

ON THE

1986 ELSINORE VALLEY BENEFIT ASSESSMENT FLOOD CONTROL BOND ISSUE (ZONE 3)

JULY 15, 1986

Kenneth L. Edwards Chief Engineer

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BACKGROUND AND INTRODUCTION

The Riverside County Flood Control and Water Conservation District was created in 1945 by an act of the State Legislature to provide for the control and conservation of flood water and to protect life and property within the District. The Legislature in the Act (Riverside County Flood Control and Water Conservation District Act, Statutes 1945, Chapter 1122, as amended) provided that the County Board of Supervisors be the governing board of the District and that funds be raised by direct tax or assessments or by the issuance of bonds.

The District was divided into six, and subsequently seven, separate taxing zones to fulfill the purpose of the Act. The Elsinore Valley is located within Zone 3 of the District. During the past years the District has developed comprehensive master drainage plans for the several subwatersheds within Zone 3.

In 1983, the District's Act was amended to permit the Board of Supervisors to levy a benefit assessment pursuant to the Benefit Assessment Act of 1982, Chapter 6.1 of Part 1 of Division 2 of Title 5 of the Government Code, to pay the principal and interest on bonds to finance any work or improvement if the issuance of bonds is approved at the same election at which the levying of the benefit assessment was approved.

In order to issue bonds the Board of Supervisors first must determine that a bonded indebtedness should be incurred to pay the cost of any work or improvement, then cause the preparation and posting of a map covering a general description of the work to be done and the location of the proposed works and improvements preparatory to a public hearing. At the close of the required public hearing, a date will be established for an election of the eligible voters within the area of benefit who must then approve the proposal by a majority vote before the general obligation bonds can be sold, if bonds are to be retired by an annual benefit assessment levy.

On July 8, 1986 the District's Board of Supervisors authorized the Chief Engineer to engage a financial consultant to review previous District financing plans, study alternative financing methods and determine the feasibility of funding critical projects in Zone 3 with a bond issue. The Chief Engineer determined that of the total Zone 3 flood control deficiencies of about $30,000,000, some $12,193,000(1) (at 1986 prices) worth of facilities are needed now or will be in the immediate future. It is hereby recommended that a benefit assessment funded plan for financing the District's portion of the program using, an estimated minimum $6.5 million(2) bond issue, be submitted to the voters.

NEED FOR CONTINUING FLOOD CONTROL WORK

Riverside County's Zone 3 area of 162 square miles, varies from elevation 3,500 at the highest westerly point in the Elsinore Mountains, to a low of 1,260 along the shore line of Lake Elsinore. Maximum and minimum annual rainfall for 89 years of record at Lake Elsinore are 31 and 3 inches occurring in 1978 and 1961, respectively. Large floods have occurred infrequently but have been particularly disastrous, perhaps because of the false sense of security

*NOTE: Footnotes indicate revisions to Engineers Report approved by the Board of Supervisors on August 5, 1986.

(1) $12,693,000
(2) $8.0 million

given by their infrequency. The floods of 1980 and 1983 were recent reminders of the disastrous potential floods can cause to this area.

The rapid increase in the County's population in recent years, some of which has concentrated in and around the City of Lake Elsinore, coupled with the State's I-15 project and other emerging economic factors all indicate the need to proceed with several projects around the lake in order to protect homes, businesses, utilities, schools and other improvements from the effects of future floods.

In recent years the District, by using its available ad valorem revenue not committed to operations and maintenance (about $100,000 per year has been available) has been able to construct only a few flood control facilities to control the flow of water through the urbanizing areas. Special District augmentation funds have also been used, but appear to be unpredictably available in the future. It is readily apparent that even with modest inflation, costs of immediately needed facilities are rising faster than the currently available revenue.

Although the works constructed are effective, many flood and inundation problems have been brought to public attention and it is obvious that an acceleration of the District's flood protection program will be essential to eliminate serious existing flooding problems and to provide for orderly development of the area.

Included in the recommended program is a project on the Lake Elsinore Outlet Channel. The U.S. Army Corps of Engineers, Los Angeles District Office has published a report which justified nearly $3,000,000 in Federal participation on the Lake Elsinore Outlet Channel project; however, the local share ($480,000)(1) of this estimated $5.5 million(2) project must be funded by Zone 3 and the District must also be able to front an additional cost of approximately $2,170,000 which will be substantially reimbursed by the State within an estimated one year period after the expenditure. In addition, the District must be able to fund entirely on its own, three related side drainage projects estimated to cost $1,925,000 to get the Federal commitment for the Outlet Channel. An additional $4,788,000 in other critical projects around the lake have all been included in the proposed bond program.

EXECUTION OF THE PROGRAM

The program presented herein is to be administered by the Riverside County Flood Control and Water Conservation District. The projects of the program will be constructed as rapidly as is practicable, and it is estimated that a period of approximately ten (10) years will be required for completion in order for the construction schedule and revenue stream for debt service and construction costs to be balanced. An earlier completion schedule is feasible if the very conservative revenue assumptions are exceeded, which is considered to be quite probable. Scheduling of the work, subject to the approval of the Board of Supervisors, will be established by the Chief Engineer with the advice and counsel of its financial consultant and the several public agencies affected.

(1) ($980,000)
(2) $6.0 million

The preparation of plans and specifications for the projects will be accomplished with the District's staff or by engineering firms in private practice. Work performed by private engineers will be under the control and direction of the Chief Engineer, who will establish criteria and standards for design and construction in accordance with generally accepted "state of the art" practice.

The construction of the work will, in general, be accomplished by private contractors through contracts awarded by the District on the basis of competitive bidding. Except in unusual circumstances, force account work will be employed only for minor, incidental items, or for emergencies where time is of the essence in the preservation of life or property.

Not all of the bonds will be sold at one time, but will be sold as needed to meet then current and anticipated financial needs. It is estimated at this time that two(1) bond sales will be proposed as shown on the Financial Projections, Table No. 1(2) shown in this report.

THE PROGRAM

A resolution of the Riverside County Flood Control and Water Conservation District is proposed to be adopted by the Board following a public hearing scheduled for August 5, 1986 fixing November 4, 1986 as the date upon which an election will be held for the purpose of voting on a proposal for authority to issue $6.5 million(3) in Zone 3 District bonds to finance the work proposed by the Engineer's Report and to levy a benefit assessment to pay the principal and interest on the bonds. The estimated maximum levy is $30.00 per BAU.

The original of this document constitutes the Engineer's Report, which will be placed on file in the Office of the County Clerk. The report proposes a program consisting of eleven (11) individual projects at an estimated cost of $12,193,000(4). The Engineer's Report is presented for use and information of the Board prior to its adoption and for use by the voters in evaluating the proposal to be submitted for their approval on November 4, 1986.

The projects proposed to be funded with the Zone 3 1986 Elsinore Valley Benefit Assessment Flood Control Bond Issue Program, are shown on the map accompanying this report and are listed herein. A watershed boundary of local runoff directly tributary to the proposed projects is shown on the map. Also shown are the Zone 3 boundary and the preliminary assessment district boundary. It should be noted that the assessment roll on file with the Clerk, and that the assessment boundary shown on the map is preliminary at this time. The boundary and rolls will be refined to more precisely match the watershed boundary within Zone 3 where runoff is directly tributary to the lake or its proposed Outlet Channel prior to the election (the revised roll will be submitted to the Clerk of the Board on October 15, 1986 and will be simultaneously posted in the District's office and in the County Library in the City of Lake Elsinore) and will be further refined by a detailed field and records review prior to the implementation of assessments in the Fall of 1987. It should also be noted that the order of listing of projects has no relationship to their priorities of construction. Scheduling of the work will be accomplished as described above. Supplemental projects have also been listed herein which could be built using these bond funds if outside income or more

(1) three
(2) Amended Table No. 1
(3) $8.0 million
(4) $12,693,000

favorable economic conditions than assumed prevail during the bond payoff period.

The program presented herewith is considered the best plan to pursue in order to control storm and flood waters in the Elsinore Valley within the monetary limitations of the total amount of bonds proposed.

The District will take maximum advantage of Federal and State grants for flood control works, i.e., Corps of Engineers, Department of Agriculture, Department of Water Resources, etc., and to the extent possible will seek assistance from the Lake Elsinore Redevelopment Agency which has funding authority and some capacity for work on the Outlet Channel and related facilities. The financial conclusions reached herein have assumed annual contributions for the first eight years of the program as shown on Table No. 1(1) coming from the Redevelopment Agency.

BENEFIT ASSESSMENTS

Benefit Assessments will be determined upon the basis of proportionate storm runoff as determined by land use, and as provided in the District's Act, and the amount of the assessment imposed on any parcel of property shall be related to the benefit to the parcel derived from the flood control improvements. This method is used elsewhere in the District and throughout the State. The single-family residence on a 7,200 square foot lot is defined as a single Benefit Assessment Unit (BAU) and all other land uses are related to it. The method is described in detail in Appendix A attached hereto.

The estimated amount of the proposed benefit assessment for 1987-88 for each parcel of property on which a benefit assessment is proposed to be levied, together with a description of such parcel (Assessor's Parcel Number), is contained and shown in the assessment rolls attached to this report as Appendix B and are incorporated herein and made part of this report by reference.

In addition to the information contained in this report, the official Riverside County Assessor's map books and other records in the office of the County Assessor are hereby referred to and by this reference are incorporated in this report. The Assessor's map books, together with Appendix B, which includes a map of Zone 3 entitled "Proposed Boundaries of Zone 3 Area of Benefit, in the County of Riverside, California", contain sufficient information for each property owner to verify the area of his or her parcel and its land use. The same map showing the proposed projects and benefit assessment boundary is included at the rear of this report.

For the convenience of the public, a copy of the assessment rolls showing the amount of the proposed benefit assessment will be placed on file at the following locations:

Clerk of the Board of Supervisors
County Administrative Center
4080 Lemon Street, 14th Floor
Riverside, CA 92501

Riverside County Flood Control
and Water Conservation District
1995 Market Street
Riverside, CA 92502-1033
Tel 714/787-1254

(1) Amended Table No. 1

Altha Merrifield Memorial Library
400 West Graham
Lake Elsinore, CA 92330

The annual assessment per BAU to pay the bond debt service is estimated at $30.00 throughout the estimated 20(1) year payout of the bonds. Funds have been included in the program to cover legal fees and bond sale as shown in the "Financial Projections Table".

If approved by the voters, this bond issue project will serve to continue Riverside County's orderly flood control and water conservation program in this area.

CEQA

The provisions of the California Environmental Quality Act (CEQA), requiring the determination of environmental impacts of projects, do not apply to the election proposed for the sale of bonds and their redemption by use of benefit assessments according to Title 14, Section 15378 of the California Administrative Code. CEQA's provisions would apply at the time actual construction projects are approved.

PROJECTS

Below is a brief description of the flood control facilities that are proposed by this report. Following these descriptions is a Summary Table showing the project name, number and estimated construction costs. The funded projects are expected to be constructed within an estimated ten (10) year period. The Board would retain the right, however, to extend the completion date if needed to meet bond payoff schedule with assessment rates as planned.

FOUR CORNERS STORM DRAIN EXTENSION

The outlet for the Four Corners Storm Drain was constructed by the District in 1981. It consists of slightly more than 2000 feet of reinforced concrete pipe extending easterly from the intersection of Lake Shore and Fraser Drives to Riverside Drive, then southerly to Lehr Drive outletting into Lake Elsinore near Iowa Street and Lehr Drive.

The proposed extension would continue the underground storm drain upstream, northwesterly in Lake Shore Drive from Fraser Drive to Ohio Street. A lateral drain would also proceed northerly in Clement Street for approximately 500 feet before terminating at a local depression in the street.

LEACH CANYON CHANNEL

The outlet for the Leach Canyon Channel, which extends westerly from Lake Elsinore to Machado Street, was constructed by the District in 1979. Machado Street is often impassable during periods of moderate to heavy rainfall. The proposed channel would make Machado an all weather crossing by extending the channel under Machado Street and far enough westerly to effectively intercept runoff from both Leach and McVicker Canyons.

(1) 18 to 27

MARINA CHANNEL EXTENSION

The outlet for the South Riverside Channel was built by the District in 1970. The channel is located south of Grand Avenue and extends from Lake Elsinore to a point about 600 feet westerly of Riverside Drive.

The channel then makes a 90 degree bend and extends toward Grand Avenue. It is at this point that the Marina Channel Extension would begin. The extension would include not only 2000 feet of concrete lined trapezoidal channel but also a bridge at Machado Street.

ADELFA CHANNEL

The area south of Grand Avenue between Adelfa Street and Blackwell Boulevard in the Lakeland Village area has had a history of flooding with uncontrolled stormwaters emanating from the steep canyons to the south. Attempts by residents to provide culverts and ditches to protect themselves, although helpful during minor rains, have proved fairly ineffective during periods of intense rainfall.

The proposed Adelfa Channel system would collect flood waters as they exit the canyons and provide conveyance to an outlet to the lake.

SKYLARK CHANNEL

Similar to the Adelfa Channel, the proposed Skylark Channel system would collect stormwaters emanating from the canyons to the south that impacts the area south of Grand Avenue and between Skylark Street and Borchard Road. Stormwaters would be conveyed to an outlet to the lake.

SEDCO LINES D AND E

The Sedco Master Drainage Plan, approved by the Board of Supervisors in 1982, proposed the Line E system as a means for collecting and conveying stormwaters from several large freeway culverts to Lake Elsinore. Storm flows pass through the I-15 freeway in several culverts including a 66 inch and an 84 inch pipe and impacts the area between Lemon and Waite Streets. The proposed Line E system would consist of underground drains to collect these flows and convey them westerly to a concrete lined channel that in turn would outlet to the lake.

The Line D system of the Sedco Master Drainage Plan, constructed during FY 85-86, is based on a similar collection and conveyance concept. However, because of right of way restrictions the main outlet is an underground storm drain in Vine Street.

Even though the construction has been completed on Line D, it was included in this program because of a need to pay off a 5 year, $100,000 loan that the District obtained to help fund the complete project during FY 85-86.

WASSON CANYON DEBRIS DAM

This proposed debris dam is one of four facilities that along with the Elsinore Outlet Channel will provide a high degree of flood protection to the area.

Historically, attempts of controlling the flood waters generated in the Wasson Canyon watershed have been hindered by the large amount of silt and other debris accompanying the flow. This proposed dam would control the debris and release runoff to the proposed Wasson Canyon Channel.

WASSON CANYON CHANNEL

Flood flows exiting Wasson Canyon are fairly well contained as they approach the large bridge culvert under the I-15 freeway. However, downstream of the freeway, containment of the runoff is practically non-existent. This proposed facility would provide this needed containment in the reach from the freeway to the Outlet Channel and provide an all weather crossing at Collier Avenue.

ARROYO DEL TORO CHANNEL

Similar to the Wasson Canyon Channel this facility would provide a means of conveying flood waters which pass under the I-15 freeway to an adequate outlet. Presently, this runoff passes through the freeway embankment in a series of 15+ culverts ranging in size from 24 inches to 48 inches. The area downstream of the freeway, including a cemetery, is currently subject to the uncontrolled flood waters that exit these culverts.

THIRD STREET CHANNEL

Although the tributary watershed of the proposed Third Street Channel is significantly smaller than those of Wasson Canyon or Arroyo del Toro, left uncontrolled, the flows passing through the freeway in the vicinity of Third Street, severely impact the area between the freeway and the Outlet Channel.

LAKE ELSINORE OUTLET CHANNEL

The U. S. Army Corps of Engineers is proposing to build the Lake Elsinore Outlet Channel as a means to reduce the maximum lake level that could be expected during periods of heavy rainfall. The channel will extend from the lake through the Warm Springs Valley, and outlet downstream of Riverside Drive with a low flow channel continuing to Nichols Road.

Even though the Corps will fund the majority of the channel construction costs, current Federal policy requires the local sponsors to pay for 5% of the Federal construction cost, plus provide at no cost to the Federal government, all lands, easements, bridges and utility relocations as outlined in the cost Summary Table.

SUMMARY TABLE

1986 ELSINORE VALLEY FLOOD CONTROL BOND ISSUE

PRIORITY PROJECTS:

MAP NO.	DESCRIPTION	COST
1.	Four Corners Storm Drain Extension	$1,077,000
2.	Leach Canyon Channel Extension	260,000
3.	Marina Channel	380,000
4.	Adelfa Street Channel	1,330,000
5.	Skylark Channel	550,000
6.	Sedco Line E & Line D	1,191,000
7.	Wasson Canyon Debris Dam	670,000
8.	Wasson Canyon Channel	320,000
9.	Third Street Channel	360,000
10.	Arroyo Del Toro Channel	575,000
11.	Lake Elsinore Outlet Channel (see below)	5,980,000

a.	Non Reimbursable RCFC & WCD Cost			
	1. 5% Federal Cost = .05 x 2,830,000	= $ 149,000		
	2. 25% Right of Way	= 135,000		
	3. 10% Bridges & Utility Relocations	= 196,000		
	4. Additional Bridge Crossing	= 500,000		
	Subtotal	980,000		
			980,000	
b.	Initial RCFC & WCD Cost (Reimbursed by State)			
	1. 75% Right of Way	= $ 405,000		
	2. 90% Bridges & Utility Relocations	= 1,765,000		
	Subtotal	2,170,000		
			2,170,000	
c.	USCE, Direct Federal Cost	2,830,000		
			2,830,000	
			5,980,000	

Total 1986 Cost of Priority Projects =	12,693,000
Deduct Federal & State Contribution =	5,000,000
Subtotal =	7,693,000
Bond Sale Fees and Legal Costs =	450,000
Total RCFC (1986 Cost) Capital Requirement =	8,143,000

SUPPLEMENTAL PROJECTS:

DESCRIPTION:

McVicker Canyon Debris Dam (McVicker Canyon)

Flint Street Storm Drain (Downstream of Freeway)

Riley Street Storm Drain (Downstream of Freeway)

Sedco Line A (Sylvester Street)

Sedco Line B (Elberta Road)

Sedco Line C (Sedco Boulevard)

South Grand Avenue Drain

West Elsinore Lines A & A-1

West Elsinore Line B

	19	20	21	22	23	24	25	26
ce	Running Cash Carry Over at Yrs.End	Net Remaining Project Costs	Bond Sale Number One DebtSrv'ce	Bond Sale Number One Balance Due	Bond Sale Numbr Two DebtSrv'ce	Bond Sale Numbr Two BalanceDue	Bond Sale NumbrThree DebtSrv'ce	Bond Sale NumbrThree BalanceDue
			4250000	.0825	2200000	.0925	1550000	.0925
			Bond Sale		Bond Sale		Bond Sale	
g.	(Last #19		to yeild		to yeild		to yeild	
	+ last18A-18)		4000000		2000000		1400000	
	+12-#17)	(Lst#20-#16)		Calculated		Calculated		Calculated
	200000	11691604		4250000				
00	45572	11411604	175313	4250000				
00	1786543	7258854	400000	4200625				
00	1699334	5605104	400000	4147177				
00	897735	4447479	400000	4089319				
00	653910	3839726	400000	4026687		2200000		
00	2151050	3195508	400000	3958889	101750	2200000	0	
00	1694772	2512636	400000	3885497	233000	2170500	0	
00	1192694	1788793	400000	3806051	233000	2138271	0	
00	545963	1021518	400000	3720050	233000	2103061	0	1550000
00	689255	0	400000	3626954	233000	2064595	180000	1513375
00	552381	0	400000	3526178	233000	2022570	180000	1473362
00	427611	0	400000	3417088	233000	1976657	180000	1429648
00	316124	0	400000	3298998	233000	1926498	180000	1381891
00	219176	0	400000	3171165	233000	1871699	180000	1329716
00	138106	0	400000	3032786	233000	1811831	180000	1272714
00	74345	0	400000	2882991	233000	1746426	180000	1210440
00	29416	0	400000	2720838	233000	1674970	180000	1142406
00	4941	0	400000	2545307	233000	1596905	180000	1068079
00	2648	0	400000	2355294	233000	1511618	180000	986876
00	8961	0	400000	2149606	233000	1418443	180000	898162
00	26728	0	400000	1926949	233000	1316649	180000	801242
00	56689	0	400000	1685922	233000	1205439	180000	695357
00	99620	0	400000	1425011	233000	1083942	180000	579677
00	156337	0	400000	1142574	233000	951207	180000	453297
00	123197	0	400000	836836	233000	806193	180000	315227
00	48650	0	400000	505875	233000	647766	180000	164386
00	5601	0	547610	0	233000	474685	179591	0
00	34031	0	0	0	233000	285593	0	0
0	66476	0	0	0	233000	79010	0	0
0	1959	0	0	0	86319	0	0	0
			10722923		5547069		3239591	

amended

TABLE NO. 1

3. Vacant (Group F)

ASSUME: A 10.0 acre vacant (undeveloped) parcel which has a recommended BAU rate of $25 per year.

No. of BAU's = (Parcel Area) X 0.05 BAU/ACRE
= 10.0 X 0.05 = 0.50 BAU's

Therefore, the assessment would total 0.50 BAU's X $25/BAU or $12.50 per year.