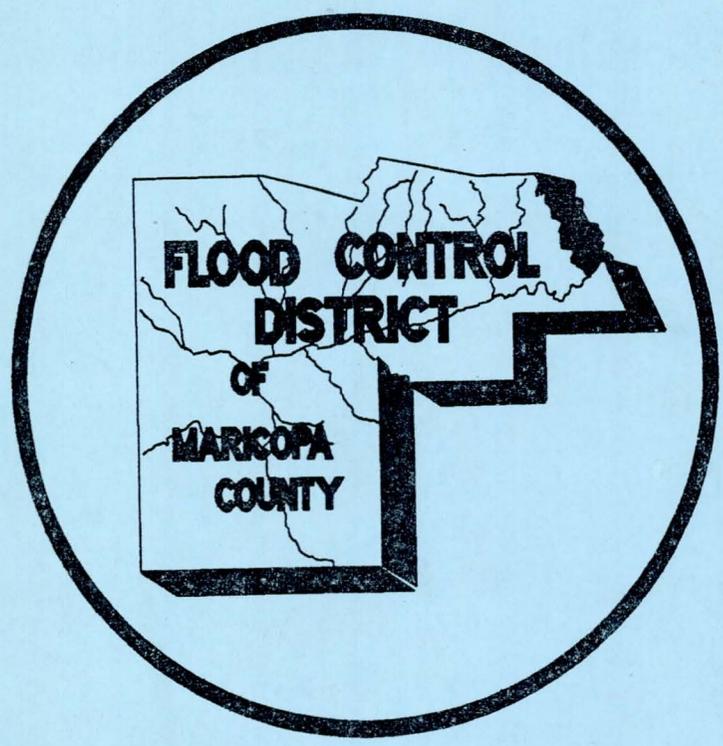


*Stan Smith
FYI*

Flood Control District
of
Maricopa County
July 24, 1992



Storm Damage
Report

802.070

By:
Mike Meng

On July 24th and 25th a series of thunder storms entered Maricopa County that seemed centered on the Phoenix Metro area. These storms caused localized street flooding occurring primarily south of the Arizona Canal Diversion Channel.

On Monday July 27th, maintenance crews from the Operations and Maintenance Branch were dispatched to all of the Flood Control District structures to survey any damage that had occurred. It was determined from these surveys that five structures received appreciable damage: the ACDC, the Agua Fria River, Cave Creek at ACDC, Sossaman Road Drain and the East Maricopa Floodway. Listed below is a brief summary of the damages to these five structures.

ACDC: The most severe damage occurred in Reach 3 between stations 595+00 and 770+00. On the north bank: At station 770+00 a large portion of the granite landscaping had been eroded and washed away. From station 720+00 to station 730+00 the entire area settled resulting in the cracking and buckling of the asphalt maintenance road, voids adjacent the channel wall, the maintenance road becoming separated from the channel wall and the apparent 4 inch rotation of the channel wall. At station 670+00 the landscaped area suffered serious erosion that will require the importation of fill material and granite. The concrete chute at station 660+00 has been undermined. This entire reach suffered minor erosion on the north bank that will also require attention.

On the south bank between stations 705+00 and 720+00 the area has settled resulting in voids adjacent the channel wall. In some of these areas the voids are 1 foot wide and have settled 2 foot.

Cave Creek at ACDC: On the east bank: From station 22+00 to station 87+00 scattered eroded areas exist. These areas will require the placement of fill material and decomposed granite.

On the west bank: From station 84+50 to station 94+00 the granite areas have eroded and require repair. At station 38+00 settling and piping adjacent the concrete liner has resulted in a void that needs to be addressed.

Agua Fria River: The damage was restricted to the north levee of the West Papago Channel. This channel is located north of I-10 on the east bank of the Agua Fria River. At station 30+35, (west end of the levee) the flows from the channel have undermined the toe of the levee approximately 8 feet causing the soil cement to break and give way.

Sossaman Road Drain: South of Baseline Road the problems are the result of the golf course east of the drain directing their runoff water into the drain. The outlets they have created in the block wall allows the run off water into Sossaman Drain via the unprotected slope. In addition, the sheet flows south of the wall are not directed into spillways. From station 5+00 to station 44+88 a total of 10 areas need to be repaired. Approximately 100 feet north of Baseline Road on the east bank, an area 39' long by 32' wide was eroded as a result of water entering the drain from a drainage ditch the parallels Baseline Road.

East Maricopa Floodway: The damage done to the EMF occurred in Reaches 3 and 4 with the most severe occurring south of Williams Field Road on the south bank, station 550+00. It appears that runoff water in the drainage ditch east of Power Road inundated a culvert and sheeted into the floodway. This resulted in the liner being undermined, lifted and buckled. The center of the liner in this section was lifted 4 inches. Because the material behind the liner has been eroded away, the top portion of the liner has dropped 8 inches. On the east bank at stations 560+00, 575+00 and 585+00 sheet flows entering the floodway caused severe erosion to the slope.

On the east bank north of Rittenhouse Road, in an area approximately 300 feet long, extensive erosion damage occurred. The access ramp into the floodway will need to be rebuilt, the entire slope in that area needs to be addressed and the upstream slope of the levee should be armored. At station 670+00 and station 680+00 on the east bank, inlet chutes were undermined and need repair. On the east bank at station 810+00 piping from the east side of the levee into the floodway needs to be repaired. In reach 3 the gravel mulch chutes on the west bank have been damaged and need repair. On the west bank, south of Hunt Highway a major piping area will need to be excavated and repaired.

RAINFALL EVENT SUMMARY

Time: 0800 on 07/28/92
To: 0800 on 07/29/92

Flood Control District
of Maricopa County

The storm was centered around the north and east of Maricopa County and
it primarily affected the city(ies) of Phoenix

The maximum rainfall amount measured on a Flood Control District gauge was
0.87 inches in 0.67 hours. This gauge was located at Wilhoit(Brdshw Mtn)

Other significant rainfall amounts were recorded at:

<u>Gauge Site and Description of Its Location</u>	<u>Precipitation Amount</u>	<u>Time Period, hrs</u>
<u>Minnehaha (Bradshaw Mtns.)</u>	<u>0.55</u>	<u>0.5 hrs</u>
<u>I 17 at Hwy 169</u>	<u>0.39</u>	<u>0.3 hrs</u>
<u>Dreamy Draw Dam</u>	<u>0.35</u>	<u>0.8 hrs</u>
<u>Humbolt Mtn. (Bradshaw Mtns.)</u>	<u>0.35</u>	<u>0.2 hrs</u>
<u>IBW @ Sweetwater</u>	<u>0.31</u>	<u>0.5 hrs</u>

The maximum rainfall recorded at the airport by the National Weather Service
was 0.00 in 0 hours. The following flood control structures conveyed
significant flows or impounded significant amounts of stormwater:

<u>Structure Name</u>	<u>Flow/Pool Depths</u>	<u>Max. Releases, cfs</u>	<u>Release Times</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Comments: (Any damages prevented by our structures? Damages to our
structures? Other?)

SOSSAMAN ROAD DRAIN



Approximately 100 feet north of Baseline Road on the east bank, an eroded area caused by runoff water from a drainage ditch that parallels Baseline Road.





East bank, station 44+88. Damage from runoff water directed through block wall at golf course.

East bank, station 15+00. The result of sheet flow entering the drain from a vacant field to the east.



E.M.F. REACH 3 AND 4



South of Williams Field Road, south bank at station 550+00. Section of liner that has been undermined from runoff water entering the floodway.





Shows the severity of the voids beneath the lined section





The liner at station 550-00 has been lifted 6 inches at the invert, (above) and has dropped 8 inches at the top of the slope, (bottom).





At station 560+00, east bank, sheet flow across access road and bar ditch. (above)

At station 575+00, east bank, erosion and piping at riprap chute. (below)





At station 585+00, east bank. Sheet flow down the unprotected bank. (above)

At station 590+00, east bank. Erosion to the access road and bank caused by sheet flow. (below)





Damage to the access road, embankment and ramp into the floodway just north of Rittenhouse Road, east bank.





Station 670+00, east bank. Piping and blow out of grouted riprap chute.





At station 810+00, east bank. Damage to access road and embankment caused by sheet flow and piping.





At station 810-00, east bank. Blow out from bar ditch to floodway. (above)

At station 857-00, west bank. Damage to gravel mulch chute. (below)





Approximately 200 feet south of Hunt Highway, west bank. Piping from the access road to the floodway.





Approximately 300 feet south of Hunt Highway, west bank. Piping and erosion damage to a gravel mulch chute.



AQUA FRIA RIVER



Damage to the south bank of the north levee, of the West Papago Drainage channel of the Agua Fria River. Soil cement has been broken off and eroded away.





The west end of the southern slope being undercut.



A.C.D.C. REACH 3

720 - 730



720 - 730



1st LOOKING WEST
NORTH BANK

Damage in Reach 3 of the Arizona Canal Diversion
Channel, station 720 to station 740, north bank.



720+00 - 730+00
NORTH BANK



739 - 740