Local Design Storm Vol. IV

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Washington, D.C. 20590

Report No.
FHWA/RD-82/066

Tabulation of Sample
Detail Results of
Statistical Analysis

May 1983

U.S. Department
of Transportation

**Federal Highway
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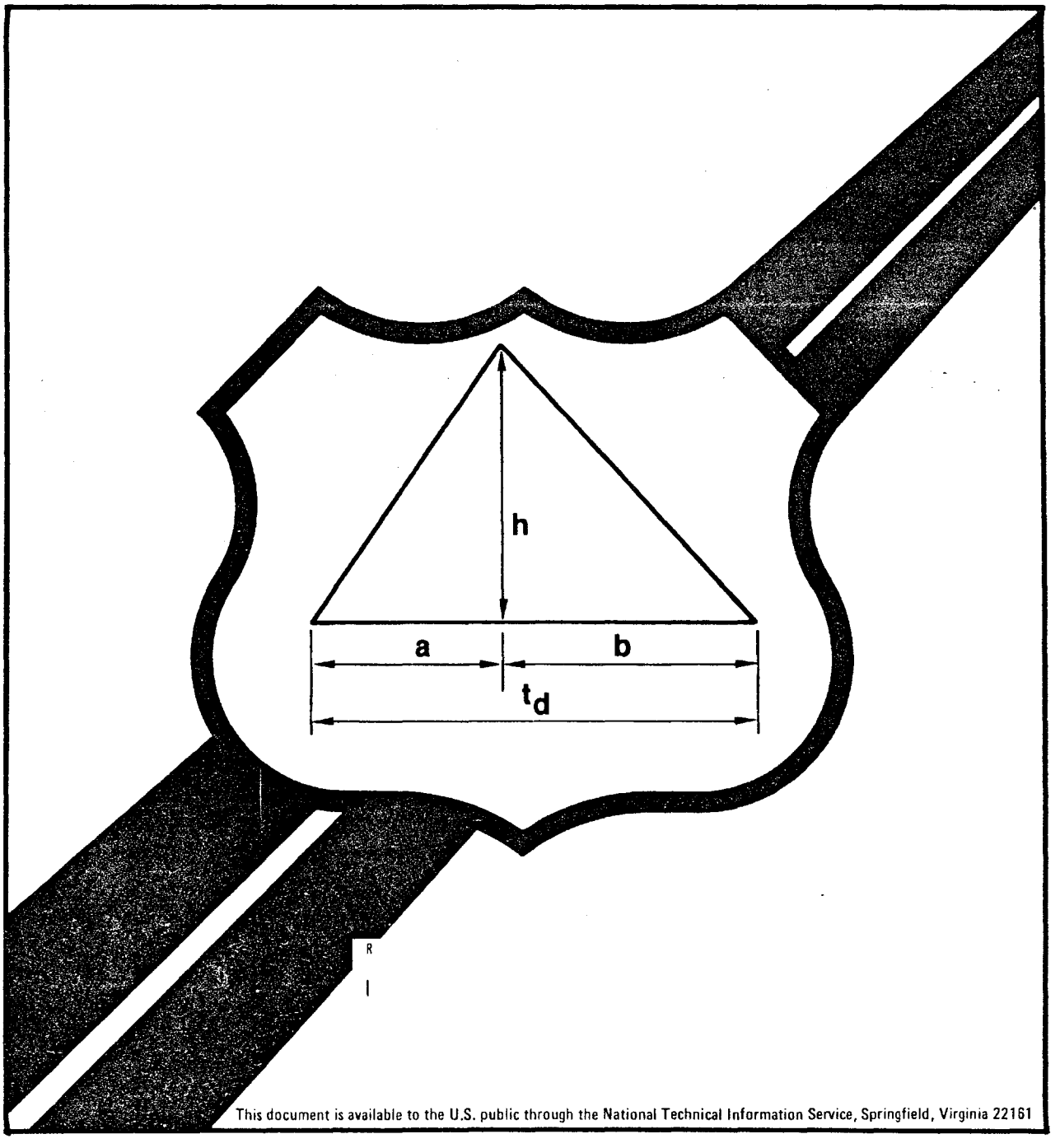
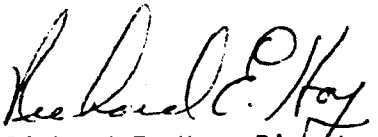


FOREWORD

This report presents detailed results of statistical analysis for two raingage stations. The enormous quantity of statistical results for all 293,946 rainstorms from 235 raingage stations analyzed in this study are stored at the University of Illinois at Urbana-Champaign, Illinois, and can be examined by interested parties upon request.

Research in urban and rural highway storm drainage is included in the Federally Coordinated Program of Highway Research and Development as Tasks 2 and 3 of Project 5H "Protection of the Highway System from Hazards Attributed to Flooding."

This report is being distributed on request only due to the specialized nature of the contents.



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16. Abstract

Recently developed improved methods for highway storm water drainage require information on the temporal distribution of rainfall (i.e., hyetograph) in addition to the average rain intensity. The triangular design hyetograph method is developed as a practical method to provide the local storm hyetograph for design of small highway drainage facilities. The method is based on the methods of moments, using and preserving the statistical mean of the first time moment of rainstorms. The method is proposed as a trade-off between theoretical sophistication and practical simplicity. A total of 293,946 rainstorms from the hourly precipitation data of 222 National Weather Service (NWS) stations and 5 to 60 minute data of 13 raingage stations of USDA Agricultural Research Service (ARS) were analyzed to provide the statistical values of the hyetograph parameters for the United States.

The results of statistical analysis of the mean, standard deviation, and range of rainstorm parameters for each class of duration and depth range for each of the 235 stations are summarized in 3600 tables which are stored at the University of Illinois at Urbana-Champaign. Results of two sample stations, one each from the NWS and ARS stations, are presented in 84 tables in this Volume IV.

The other three volumes of this report set are
Vol. I. Executive Summary (FHWA/RD-82/063)
Vol. II. Methodology and Analysis (FHWA/RD-82/064)
Vol. III. User's Manual (FHWA/RD-82/065)

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I. GENERAL DESCRIPTION

This fourth volume of the report set, "Local Design Storm," presents the detailed computer analysis results of the rainfall data at two sample stations; namely, the National Weather Service (NWS) Washington D.C. National Airport station which is a representative NWS station with hourly precipitation data from recording weighing gauges, and the U.S. Department of Agriculture - Agricultural Research Service (USDA ARS) station 00Y102 at Coshocton, Ohio which is a representative agricultural experimental watershed raingage station of ARS. The ARS precipitation data were compiled in four different recording time interval, Δt = 5, 15, 30, and 60 minutes for analysis.

The complete set of the results of the statistical analysis consists of 3600 tables containing the mean, standard deviation, and range of rainstorm parameters for each class of duration and depth range for each of the 235 stations (222 NWS stations and 13 ARS stations). Because of the huge volume of the entire set of tables, only the results of two typical stations are presented in this report as examples. These 3600 tables of results together with all the detailed rainfall data of these 235 stations are stored in the Hydrosystems Laboratory of the Department of Civil Engineering of the University of Illinois at Urbana-Champaign.

II. SAMPLE RESULTS FROM NWS DATA

The detailed results of statistical analysis of the NWS hourly rainfall data of the 222 NWS stations are summarized in 2664 tables. These stations are listed in Table 1 following the order of the NWS station numbers, i.e., according to the alphabetic order of the 48 contiguous United States followed by Alaska, Hawaii, and Puerto Rico. The "season" for which the data were analyzed is from 16 April to 15 October except for the 21 stations marked in Table 1.

For each station the computed values of the statistical mean, standard deviation, and range of 15 parameters for rainstorms belonging to each class of duration and depth range are presented in 12 tables in the following sequence.

- 2-hour duration:
  - (a) $D \geq 0.5\ D_{mean}$
  - (b) $D \geq D_{mean}$
  - (c) $D \geq 2\ D_{mean}$
- 3-hour duration:
  - (a) $D \geq 0.5\ D_{mean}$
  - (b) $D \geq D_{mean}$
  - (c) $D \geq 2\ D_{mean}$
- 4-hour duration:
  - (a) $D \geq 0.5\ D_{mean}$
  - (b) $D \geq D_{mean}$
  - (c) $D \geq 2\ D_{mean}$
- 5-hour duration:
  - (a) $D \geq 0.5\ D_{mean}$
  - (b) $D \geq D_{mean}$
  - (c) $D \geq 2\ D_{mean}$

The 15 rainstorm parameters listed in each of the tables are as follows:

(a) Rainfall duration, t_d, in hours

(b) Rainfall depth, D, in inches, $D = \sum_{j=1}^{n} d_j$ where d_j is the rain depth in the j-th time interval, and n is the number of equal time intervals Δt occupied by the storm

(c) Average rainfall intensity, $i = D/t_d$ in in./hr

(d) First moment arm of the hyetograph with respect to the commencement of rainfall, in hours,

$$\bar{t} = \frac{\Delta t}{D}\left[\sum_{j=1}^{n} (j - 0.5)d_j\right]$$

(e) Second moment arm of the hyetograph with respect to the commencement of rainfall, in hours square,

$$G = \frac{(\Delta t)^2}{D}\left[\sum_{j=1}^{n} (j - 0.5)^2 d_j + \frac{1}{12} D\right]$$

(f) Standard deviation with respect to $\bar{t}$, in hours,

$$\sigma_t = \left[\frac{(\Delta t)^2}{D}\sum_{j=1}^{n} (j - 0.5)^2 d_j - \bar{t}^2\right]^{1/2}$$

(g) Nondimensional time standard deviation,

$$\sigma_t^\circ = \sigma_t / t_d$$

(h) Nondimensional second moment arm of the hyetograph,

$$G_1^\circ = G / t_d^2$$

(i) Nondimensional first moment arm of the hyetograph,

$$\bar{t}^\circ = \bar{t}/t_d$$

(j) Standard deviation of rain depth, in inches,

$$\sigma_d = \left[\frac{1}{n}\sum_{j=1}^{n} (d_j - \bar{d})^2\right]^{1/2}$$

(k) Nondimensional depth standard deviation,

$$\sigma_d^\circ = \sigma_d/D$$

(l) Time of peak rain intensity after the commencement of rainfall, in hours,

$$a = 3\bar{t} - t_d$$

(m) Time from peak rain intensity to ceasation of rainfall, in hours,

$$b = t_d - a$$

(n) Nondimensional time of peak rain intensity,

$$a^\circ = a / t_d$$

(o) Nondimensional time from peak rain intensity to ceasation of rain,

$$b^\circ = b / t_d = 1 - a^\circ$$

The number of rainstorms in each class used to compute the values for each of the tables is also given.

The detailed results of statistical analysis for a sample NWS station, the Washington D.C. National Airport station are presented in Tables 2 to 5 as an example.

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
BIRMINGHAM AP	AL	10831	1 JUN 1948	1948 - 1978	1317
GUNTERSVILLE	AL	13578	1 JUL 1948	1962 - 1978	568
HUNTSVILLE AP	AL	14064	1 NOV 1958	1959 - 1978	876
MOBILE AP	AL	15478	1 JUL 1948	1958 - 1978	1108
MONTGOMERY AP	AL	15550	1 JUL 1948	1948 - 1978	1035
PAINT ROCK	AL	16226	1 JUL 1948	1948 - 1978	1144
TONEY	AL	18259	1 JUL 1948	1948 - 1978	1052
FLAGSTAFF AP	AZ	23010	1 JAN 1950	1950 - 1978	770
PHOENIX AP	AZ	26481	1 JUL 1948	1954 - 1978	203
TUCSON AP	AZ #	28820	1 JUL 1948	1948 - 1978	1114
WINSLOW AP	AZ	29439	1 JUL 1948	1948 - 1978	579
YUMA AP	AZ #	29660	1 SEP 1948	1949 - 1978	293
ALICIA	AR	30064	1 MAY 1948	1948 - 1978	927
FORT SMITH AP	AR	32574	2 MAY 1948	1949 - 1978	1086
PRESCOTT SCS	AR	35910	3 MAY 1948	1948 - 1978	1050
BAKERSFIELD AP	CA #	40442	1 JUL 1948	1948 - 1978	827
EUREKA CI	CA #	42910	1 JUL 1948	1948 - 1978	3342
FRESNO AP	CA #	43257	1 JUL 1948	1948 - 1978	1058
LOS ANGELES AP	CA #	45114	1 JUL 1948	1948 - 1978	671
OAKLAND AP	CA #	46335	1 JUL 1948	1948 - 1978	1518
RED BLUFF AP	CA #	47292	1 JUL 1948	1948 - 1978	1521
SACRAMENTO CI	CA #	47633	1 JAN 1936	1936 - 1978	1935
SAN FRAN. AP	CA #	47769	1 JUL 1948	1948 - 1978	1530
SAN FRAN. CI	CA #	47772	1 JUL 1948	1948 - 1978	1592
SANTA MARIAIAP	CA #	47946	1 JUL 1948	1948 - 1978	1069
ALAMOSA AP	CO	50130	1 SEP 1948	1949 - 1978	703
DENVER AP	CO	52220	1 AUG 1948	1949 - 1978	810
GRANADA	CO	53477	1 AUG 1948	1949 - 1978	732
GRAND JUNCTION	CO	53488	1 AUG 1948	1949 - 1978	627
PUEBLO AP	CO	56740	1 JUN 1954	1954 - 1978	590
BRIDGEPORT AP	CT	60806	1 JUL 1948	1948 - 1978	1216
HARTFORD AP	CT	63456	1 AUG 1954	1955 - 1978	1023
WILMINGTON AP	DE	79595	1 AUG 1948	1949 - 1978	887
DAYTONA BH AP	FL	82158	1 JAN 1942	1942 - 1978	1917
JACKSONVILLE	FL	84358	1 JAN 1948	1949 - 1978	1491
KEY WEST AP	FL	84570	1 AUG 1948	1958 - 1978	940
LAKELAND CI	FL	84797	1 MAR 1943	1943 - 1978	1973
MIAMI AP	FL	85663	1 AUG 1948	1949 - 1978	1791
TALLAHASSEE	FL	88758	1 AUG 1948	1958 - 1978	1036
TAMPA WSMO	FL	88788	1 JUN 1948	1948 - 1978	1162
WEST PALM BH	FL	89525	1 JAN 1942	1942 - 1978	2310

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis (Continued)

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
ATHENS AP	GA	90435	1 AUG 1948	1958 - 1978	876
ATLANTA AP	GA	90451	1 JUN 1948	1948 - 1978	1243
AUGUSTA AP	GA	90495	1 AUG 1948	1949 - 1978	1155
COLUMBUS AP	GA	92166	1 JUN 1948	1948 - 1978	1293
MACON	GA	95443	1 JAN 1949	1949 - 1978	1162
ROME AP	GA	97610	1 JUN 1948	1948 - 1978	1307
SAVANNAH AP	GA	97847	1 JUN 1948	1948 - 1978	1508
BOISE AP	ID	101022	1 JUL 1948	1948 - 1978	611
LEWISTON AP	ID	105241	1 OCT 1949	1954 - 1978	721
POCATELLO AP	ID	107211	1 JUL 1948	1948 - 1978	738
CAIRO CI	IL	111166	1 JUL 1948	1948 - 1978	1271
CHICAGO MIDWAY	IL	111577	1 JUL 1948	1948 - 1978	1394
PEORIA AP	IL	116711	1 JUL 1948	1948 - 1978	1383
SPRINGFIELD AP	IL	118179	1 JUL 1948	1948 - 1978	1342
EVANSVILLE AP	IN	122738	1 JUL 1948	1948 - 1978	1284
FORT WAYNE AP	IN	123037	1 JUL 1948	1948 - 1978	1462
INDIANAPOLIS	IN	124259	1 JUL 1948	1948 - 1978	1376
SOUTH BEND AP	IN	128187	1 JUL 1948	1948 - 1978	1482
BURLINGTON	IA	131060	1 DEC 1964	1965 - 1978	561
DES MOINES AP	IA	132203	1 AUG 1948	1949 - 1978	1294
DUBUQUE AP	IA	132367	1 FEB 1951	1951 - 1978	1254
IOWA CITY	IA	134131	1 AUG 1948	1949 - 1978	1259
SIOUX CITY AP	IA	137708	1 AUG 1948	1949 - 1978	1224
WATERLOO AP	IA	138706	1 MAY 1956	1956 - 1978	985
COLUMBUS	KS	141740	1 AUG 1948	1949 - 1978	1200
CONCORDIA AP	KS	141767	1 JUN 1962	1962 - 1978	701
DODGE CITY AP	KS	142164	1 AUG 1948	1949 - 1978	971
GOODLAND AP	KS	143153	1 AUG 1948	1949 - 1978	918
TOPEKA AP	KS	148167	1 SEP 1948	1949 - 1978	1163
WICHITA AP	KS	148830	1 DEC 1953	1954 - 1978	920
LEXINGTON AP	KY	154746	1 AUG 1948	1949 - 1978	1450
LOUISVILLE AP	KY	154954	1 AUG 1948	1949 - 1978	1349
BATON ROUGE AP	LA	160549	1 OCT 1947	1948 - 1978	1227
NEW ORLEANS AP	LA	166660	1 JAN 1954	1954 - 1978	1156
SHREVEPORT AP	LA	168440	1 OCT 1947	1960 - 1978	610
CARIBOU AP	ME	171175	1 MAY 1948	1948 - 1978	1697
PORTLAND AP	ME	176905	1 MAY 1948	1948 - 1978	1293
BALTIMORE AP	MD	180465	1 AUG 1948	1949 - 1978	1104
BALTIMORE CI	MD	180470	1 MAY 1948	1948 - 1978	1231
BELTSVILLE	MD	180705	1 JAN 1949	1949 - 1978	1156
SINES DEEP CRK	MD	188315	1 SEP 1948	1949 - 1978	2035

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis (Continued)

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
BOSTON AP	MA	190770	1 MAY 1948	1948 - 1978	1345
NEW BEDFORD	MA	195246	1 MAY 1948	1948 - 1978	1088
WORCESTER AP	MA	199923	1 JUN 1948	1957 - 1978	971
DETROIT	MI	202103	1 OCT 1959	1960 - 1978	907
FLINT AP	MI	202846	1 JUL 1948	1958 - 1978	965
LANSING AP	MI	204641	1 JUL 1948	1959 - 1978	949
MARQUETTE CI	MI	205178	1 JUL 1948	1948 - 1978	1608
MUSKEGON AP	MI	205712	1 JUL 1948	1948 - 1978	1345
SAULT ST.MARIE	MI	207366	1 JUL 1948	1948 - 1978	1783
DULUTH AP	MN	212248	1 AUG 1948	1949 - 1978	1452
MINN-ST PAUL,	MN	215435	1 AUG 1948	1949 - 1978	1361
ROCHESTER,	MN	217004	1 AUG 1948	1949 - 1978	1396
ST CLOUD AP	MN	217294	1 AUG 1948	1949 - 1978	1318
MERIDIAN AP	MS	225776	1 JUN 1948	1949 - 1978	1159
ALTON	MR	230127	1 AUG 1948	1949 - 1978	1100
HIGH POINT	MR	233849	1 NOV 1948	1949 - 1978	1292
ST LOUIS AP	MR	237455	1 AUG 1948	1949 - 1978	1200
SPRINGFIELD AP	MR	237976	1 AUG 1948	1949 - 1978	1289
BILLINGS AP	MT	240807	1 JUL 1948	1948 - 1978	937
GLENDIVE	MT	243581	1 SEP 1948	1949 - 1978	1054
GREAT FALLS AP	MT	243751	1 JUL 1948	1949 - 1978	1046
HELENA AP AP	MT	244055	1 JUL 1948	1948 - 1978	963
KALISPELL AP	MT	244558	1 JUN 1949	1953 - 1978	993
MILES CITY AP	MT	245690	1 AUG 1948	1952 - 1978	111
MISSOULA AP	MT	245745	1 JUL 1948	1948 - 1978	1102
GRAND ISLAND	NE	253395	3 AUG 1948	1949 - 1978	1148
NORTH PLATTE	NE	256065	10 AUG 1948	1949 - 1978	1021
SCOTTSBLUFF AP	NE	257665	12 SEP 1948	1949 - 1978	928
VALENTINE AP	NE	258760	1 AUG 1948	1949 - 1978	1017
ELKO AP	NV	262573	1 JUL 1948	1948 - 1978	572
ELY AP	NV	262631	1 JUL 1948	1948 - 1978	675
LAS VEGAS AP	NV	264436	1 JAN 1949	1949 - 1978	166
RENO AP	NV	266779	1 JUL 1948	1948 - 1978	356
WINNEMUCCA AP	NV	269171	1 JUL 1948	1948 - 1978	472
CONCORD AP	NH	271683	1 MAY 1948	1948 - 1978	1355
MT WASHINGTON	NH	275639	1 MAY 1948	1948 - 1978	1871
NEWARK AP	NJ	286026	1 MAY 1948	1948 - 1978	1306
TRENTON CI	NJ	288883	2 MAY 1948	1948 - 1978	1278

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis (Continued)

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
ALBUQUERQUE AP	NM	290234	1 OCT 1947	1949 - 1978	579
CARRIZOZO	NM	291515	1 OCT 1947	1948 - 1978	847
CLAYTON AP	NM	291887	1 OCT 1947	1948 - 1978	891
WHITE SANDS	NM	299686	1 NOV 1947	1949 - 1978	524
ALBANY AP	NY	300042	1 MAY 1948	1948 - 1978	1464
BINGHAMPTON	NY	300687	1 JUL 1951	1951 - 1978	1449
BUFFALO AP	NY	301012	1 MAY 1948	1948 - 1978	1523
CANTON	NY	301185	1 MAY 1948	1948 - 1978	1603
N.Y.CENTRL PK.	NY	305801	1 MAY 1948	1948 - 1978	1329
NY LA GUARDIA	NY	305811	1 MAY 1948	1948 - 1978	1241
ROCHESTER AP	NY	307167	1 MAY 1948	1948 - 1978	1419
SYRACUSE AP	NY	308383	1 MAY 1948	1948 - 1978	1604
WOODLANDS-ARD.	NY	309576	1 MAY 1948	1948 - 1978	1338
ASHEVILLE	NC	310301	1 AUG 1902	1903 - 1978	3960
CAPE HATTERAS	NC	311458	1 MAY 1957	1957 - 1978	999
CHARLOTTE AP	NC	311690	1 JUN 1948	1948 - 1978	1292
RALEIGH-DUR.AP	NC	317069	1 JUN 1948	1948 - 1978	1279
WILMINGTON AP	NC	319457	1 OCT 1949	1950 - 1978	1373
BISMARCK AP	ND	320819	5 AUG 1948	1949 - 1978	1031
FARGO AP	ND	322859	9 AUG 1948	1949 - 1978	1161
CINCINNATI A.	OH	331561	14 AUG 1948	1949 - 1978	1383
CLEVELAND AP	OH	331657	1 AUG 1948	1949 - 1978	1494
COLUMBUS AP	OH	331786	5 AUG 1948	1949 - 1978	1455
TOLEDO AP	OH	338357	1 JAN 1955	1955 - 1978	1103
YOUNGSTOWN AP	OH	339406	8 AUG 1948	1949 - 1978	1579
GREAT SALT P.	OK	343740	1 OCT 1947	1948 - 1978	815
KINGSTON	OK	344865	1 OCT 1947	1948 - 1978	944
OKLAHOMA CITY	OK	346661	1 OCT 1947	1948 - 1978	1029
TULSA AP	OK	348992	1 OCT 1947	1948 - 1978	1089
WOODWARD FD. S.	OK	349762	1 JAN 1949	1949 - 1978	839
ASTORIA AP	OR #	350328	1 MAR 1953	1953 - 1978	5076
BANDON	OR #	350471	1 OCT 1948	1949 - 1978	4387
BURNS CI	OR	351176	1 AUG 1948	1949 - 1978	614
EUGENE AP	OR #	352709	5 JUL 1948	1948 - 1978	3768
LAKEVIEW	OR	354670	1 OCT 1948	1949 - 1978	749
MEDFORD AP	OR	355429	1 DEC 1948	1949 - 1978	633
PENDLETON	OR	356546	4 DEC 1948	1949 - 1978	680
PORTLAND AP	OR #	356751	3 NOV 1948	1949 - 1978	4108

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis (Continued)

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
ALLENTOWN AP	PA	360106	1 MAY 1948	1948 - 1978	1442
ERIE AP	PA	362682	1 MAY 1948	1948 - 1978	1176
HARRISBURG	PA	363699	1 MAY 1948	1948 - 1978	1387
JOHNSTOWN	PA	364390	1 MAY 1948	1948 - 1978	1686
PHILADELPHIA	PA	366889	1 JAN 1900	1900 - 1978	3330
PITTSBURGH CI	PA	366997	1 MAY 1948	1948 - 1978	1548
SMETHPORT	PA	368190	1 MAY 1948	1948 - 1978	1626
W-BARRE-SCRAN.	PA	369705	1 FEB 1964	1964 - 1978	800
WILLIAMSPORT	PA	369728	1 MAY 1948	1950 - 1978	1457
BLOCK ISLAND	RI	370896	1 MAY 1948	1948 - 1978	1083
PROVIDENCE AP	RI	376698	1 MAY 1948	1948 - 1978	1208
CHARLESTON CI	SC	381549	1 JUN 1948	1948 - 1978	1347
COLUMBIA	SC	381939	1 AUG 1948	1954 - 1978	1080
GREENVILLE-SPA.	SC	383747	1 OCT 1962	1963 - 1978	684
ABERDEEN AP	SD	390020	1 AUG 1948	1949 - 1978	1042
RAPID CITY AP	SD	396937	10 AUG 1948	1949 - 1978	1082
SIOUX FALLS AP	SD	397667	1 AUG 1948	1949 - 1978	1188
BRISTOL AP	TN	401094	1 SEP 1948	1949 - 1978	1458
CHATTANOOGA	TN	401656	5 SEP 1948	1949 - 1978	1365
KNOXVILLE AP	TN	404950	4 SEP 1948	1949 - 1978	1394
MEMPHIS AP	TN	405954	1 SEP 1948	1949 - 1978	1131
NASHVILLE AP	TN	406402	3 SEP 1948	1949 - 1978	1303
ABILENE AP	TX	410016	23 DEC 1940	1948 - 1978	802
AMARILLO AP	TX	410211	4 FEB 1941	1949 - 1978	886
AUSTIN AP	TX	410428	22 AUG 1942	1949 - 1978	803
BROWNSVILLE AP	TX	411136	21 APR 1942	1949 - 1978	738
CORPUS CHRISTI	TX	412015	1 OCT 1947	1949 - 1978	783
DEL RIO AP	TX	412360	15 MAY 1951	1964 - 1978	342
EL PASO AP	TX	412797	1 AUG 1942	1949 - 1978	404
GALVESTON CI	TX	413430	1 JAN 1940	1949 - 1978	873
LUBBOCK AP	TX	415411	1 APR 1940	1958 - 1978	530
MIDLAND AP	TX	415890	26 FEB 1941	1954 - 1978	544
PORT ARTHUR AP	TX	417174	1 DEC 1947	1953 - 1978	959
SAN ANTONIA	TX	417945	13 JAN 1941	1949 - 1978	798
WACO AP	TX	419419	5 FEB 1941	1949 - 1978	767
WICHITA FALLS	TX	419729	2 MAY 1940	1949 - 1978	845
MILFORD AP	UT	425654	1 JUL 1948	1949 - 1978	575
SALT LAKE CITY	UT	427598	1 JUL 1948	1948 - 1978	791

TABLE 1. NWS Precipitation Stations Selected for Hourly Data Analysis (Continued)

Location		Station No.	Beginning of Data Period§	Period Analyzed	No. of Rainstorms Analyzed*
BURLINGTON AP	VT	431081	1 MAY 1948	1948 - 1978	1747
NEWPORT	VT	435542	1 MAY 1948	1948 - 1978	1952
NORFOLK AP	VA	446139	5 AUG 1948	1954 - 1978	1032
RICHMOND AP	VA	447201	4 AUG 1948	1949 - 1978	1199
RAONOKE AP	VA	447285	11 AUG 1948	1949 - 1978	1331
WASH. NATIONAL	VA	448906	1 MAY 1948	1948 - 1978	1232
COULEE DAM	WA	451767	5 JUL 1948	1948 - 1978	667
OLYMPIA AP	WA #	456114	6 JUL 1948	1955 - 1978	3764
SEATTLE-TACOMA	WA #	457473	4 JUL 1948	1965 - 1978	1925
SPOKANE AP	WA	457938	8 AUG 1948	1949 - 1978	797
WALLA WALLA CI	WA	458931	1 JUL 1948	1948 - 1978	688
YAKIMA AP	WA	459465	1 SEP 1948	1949 - 1978	395
CHARLESTON AP	WV	461570	1 AUG 1948	1949 - 1978	1449
ELKINS AP	WV	462718	1 AUG 1948	1949 - 1978	1968
PARKERSBURG CI	WV	466859	4 AUG 1948	1949 - 1978	1445
GREEN BAY AP	WI	473269	1 AUG 1948	1949 - 1978	1348
MADISON AP	WI	474961	1 AUG 1948	1949 - 1978	1366
MILWAUKEE AP	WI	475479	1 SEP 1948	1949 - 1978	1347
PHELPS DEERSK.	WI	476518	1 AUG 1948	1949 - 1978	1678
SHERIDAN AP	WY	488155	1 AUG 1948	1949 - 1978	1018
FAIRBANKS AP	AK	502968	4 SEP 1949	1963 - 1978	553
JUNEAU AP	AK	504100	1 SEP 1949	1963 - 1978	1363
LIHUE AP KAUAI	HI #	515580	1 OCT 1962	1963 - 1978	1927
HONOLULU AP	HI #	521919	1 OCT 1962	1963 - 1978	953
HILO AP MAKA.	HI #	561492	2 OCT 1962	1963 - 1978	4515
SAN JUAN AP	PR	668812	1 JAN 1967	1967 - 1978	659
					274884

§Digitized data for all stations end in December 1978 except Beltsville, MD which ends on 22 September 1978.

*Excluding rainstorms having durations of 1-hour and 6 or more hours.

"season" for these 21 stations is the entire year. For other (unmarked) stations "season" is from 16 April to 15 October.

TABLE 2A. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 2.0 HR
RAINFALL DEPTH RANGE .093 IN. (MEAN/2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	2.000	0.000	2.000	2.000
DEPTH	(IN.)	.346	.343	.100	2.750
INTENSITY	(IN./HR)	.173	.172	.050	1.375
FIRST TIME MOMENT	(HR)	.850	.290	.506	1.483
SECOND TIME MOMENT	(HR*HR)	1.033	.581	.346	2.299
TIME STANDARD DEVIATION	(HR)	.363	.110	.080	.500
NONDIM. TIME STD.DEV.	( )	.181	.055	.040	.250
NONDIM. 2ND TIME MOMENT	( )	.258	.145	.087	.575
NONDIM. 1ST TIME MOMENT	( )	.425	.145	.253	.742
DEPTH STANDARD DEVIATION	(IN.)	.111	.144	0.000	1.235
NONDIM. DEPTH STD.DEV.	( )	.294	.141	0.000	.494
A OF TRI. HYETOGRAPH	(HR)	.623	.737	0.000	2.000
B OF TRI. HYETOGRAPH	(HR)	1.377	.737	0.000	2.000
A OF NONDIM. HYETOGRAPH	( )	.311	.369	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.689	.369	0.000	1.000

***** NUMBER OF RAINSTORMS = 291 *****

TABLE 2B. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 2.0 HR
RAINFALL DEPTH RANGE .187 IN. (MEAN) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	2.000	0.000	2.000	2.000
DEPTH	(IN.)	.481	.381	.190	2.750
INTENSITY	(IN./HR)	.241	.191	.095	1.375
FIRST TIME MOMENT	(HR)	.828	.298	.506	1.483
SECOND TIME MOMENT	(HR*HR)	.990	.596	.346	2.299
TIME STANDARD DEVIATION	(HR)	.343	.119	.080	.500
NONDIM. TIME STD.DEV.	( )	.172	.060	.040	.250
NONDIM. 2ND TIME MOMENT	( )	.247	.149	.087	.575
NONDIM. 1ST TIME MOMENT	( )	.414	.149	.253	.742
DEPTH STANDARD DEVIATION	(IN.)	.158	.167	0.000	1.235
NONDIM. DEPTH STD.DEV.	( )	.312	.144	0.000	.494
A OF TRI. HYETOGRAPH	(HR)	.583	.741	0.000	2.000
B OF TRI. HYETOGRAPH	(HR)	1.417	.741	0.000	2.000
A OF NONDIM. HYETOGRAPH	( )	.292	.370	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.708	.370	0.000	1.000

***** NUMBER OF RAINSTORMS = 178 *****

TABLE 2C. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 2.0 HR
RAINFALL DEPTH RANGE .374 IN. (MEAN*2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	2.000	0.000	2.000	2.000
DEPTH	(IN.)	.728	.442	.380	2.750
INTENSITY	(IN./HR)	.364	.221	.190	1.375
FIRST TIME MOMENT	(HR)	.793	.297	.506	1.483
SECOND TIME MOMENT	(HR*HR)	.920	.593	.346	2.299
TIME STANDARD DEVIATION	(HR)	.322	.129	.080	.500
NONDIM. TIME STD.DEV.	( )	.161	.064	.040	.250
NONDIM. 2ND TIME MOMENT	( )	.230	.148	.087	.575
NONDIM. 1ST TIME MOMENT	( )	.397	.148	.253	.742
DEPTH STANDARD DEVIATION	(IN.)	.248	.207	0.000	1.235
NONDIM. DEPTH STD.DEV.	( )	.331	.143	0.000	.494
A OF TRI. HYETOGRAPH	(HR)	.512	.724	0.000	2.000
B OF TRI. HYETOGRAPH	(HR)	1.488	.724	0.000	2.000
A OF NONDIM. HYETOGRAPH	( )	.256	.362	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.744	.362	0.000	1.000

***** NUMBER OF RAINSTORMS = 83 *****

TABLE 3A. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 3.0 HR
RAINFALL DEPTH RANGE .162 IN. (MEAN/2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	3.000	0.000	3.000	3.000
DEPTH	(IN.)	.539	.469	.170	2.820
INTENSITY	(IN./HR)	.180	.156	.057	.940
FIRST TIME MOMENT	(HR)	1.232	.388	.545	2.296
SECOND TIME MOMENT	(HR*HR)	2.071	1.025	.455	5.556
TIME STANDARD DEVIATION	(HR)	.545	.155	.188	.964
NONDIM. TIME STD.DEV.	( )	.182	.052	.063	.321
NONDIM. 2ND TIME MOMENT	( )	.230	.114	.051	.617
NONDIM. 1ST TIME MOMENT	( )	.411	.129	.182	.765
DEPTH STANDARD DEVIATION	(IN.)	.160	.165	.009	1.028
NONDIM. DEPTH STD.DEV.	( )	.274	.092	.055	.450
A OF TRI. HYETOGRAPH	(HR)	.908	.872	0.000	3.000
B OF TRI. HYETOGRAPH	(HR)	2.092	.872	0.000	3.000
A OF NONDIM. HYETOGRAPH	( )	.303	.291	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.697	.291	0.000	1.000

***** NUMBER OF RAINSTORMS = 179 *****

TABLE 3B. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 3.0 HR
RAINFALL DEPTH RANGE .325 IN. (MEAN) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	3.000	0.000	3.000	3.000
DEPTH	(IN.)	.768	.502	.330	2.820
INTENSITY	(IN./HR)	.256	.167	.110	.940
FIRST TIME MOMENT	(HR)	1.143	.406	.545	2.296
SECOND TIME MOMENT	(HR*HR)	1.830	1.035	.455	5.556
TIME STANDARD DEVIATION	(HR)	.502	.156	.188	.964
NONDIM. TIME STD.DEV.	( )	.167	.052	.063	.321
NONDIM. 2ND TIME MOMENT	( )	.203	.115	.051	.617
NONDIM. 1ST TIME MOMENT	( )	.381	.135	.182	.765
DEPTH STANDARD DEVIATION	(IN.)	.239	.179	.045	1.028
NONDIM. DEPTH STD.DEV.	( )	.305	.086	.066	.450
A OF TRI. HYETOGRAPH	(HR)	.742	.853	0.000	3.000
B OF TRI. HYETOGRAPH	(HR)	2.258	.853	0.000	3.000
A OF NONDIM. HYETOGRAPH	( )	.247	.284	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.753	.284	0.000	1.000

***** NUMBER OF RAINSTORMS = 104 *****

TABLE 3C. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 3.0 HR
RAINFALL DEPTH RANGE .649 IN. (MEAN*2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	3.000	0.000	3.000	3.000
DEPTH	(IN.)	1.157	.538	.650	2.820
INTENSITY	(IN./HR)	.386	.179	.217	.940
FIRST TIME MOMENT	(HR)	1.079	.429	.545	2.296
SECOND TIME MOMENT	(HR*HR)	1.659	1.063	.455	5.556
TIME STANDARD DEVIATION	(HR)	.458	.146	.188	.873
NONDIM. TIME STD.DEV.	( )	.153	.049	.063	.291
NONDIM. 2ND TIME MOMENT	( )	.184	.118	.051	.617
NONDIM. 1ST TIME MOMENT	( )	.360	.143	.182	.765
DEPTH STANDARD DEVIATION	(IN.)	.372	.195	.107	1.028
NONDIM. DEPTH STD.DEV.	( )	.327	.090	.066	.450
A OF TRI. HYETOGRAPH	(HR)	.663	.822	0.000	3.000
B OF TRI. HYETOGRAPH	(HR)	2.337	.822	0.000	3.000
A OF NONDIM. HYETOGRAPH	( )	.221	.274	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.779	.274	0.000	1.000

***** NUMBER OF RAINSTORMS = 46 *****

TABLE 4A. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 4.0 HR
RAINFALL DEPTH RANGE .224 IN. (MEAN/2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	4.000	0.000	4.000	4.000
DEPTH	(IN.)	.708	.672	.240	4.350
INTENSITY	(IN./HR)	.177	.168	.060	1.088
FIRST TIME MOMENT	(HR)	1.729	.590	.693	3.143
SECOND TIME MOMENT	(HR*HR)	4.083	2.212	.895	10.813
TIME STANDARD DEVIATION	(HR)	.790	.201	.372	1.204
NONDIM. TIME STD.DEV.	( )	.198	.050	.093	.301
NONDIM. 2ND TIME MOMENT	( )	.255	.138	.056	.676
NONDIM. 1ST TIME MOMENT	( )	.432	.147	.173	.786
DEPTH STANDARD DEVIATION	(IN.)	.172	.208	.017	1.294
NONDIM. DEPTH STD.DEV.	( )	.218	.087	.053	.386
A OF TRI. HYETOGRAPH	(HR)	1.416	1.302	0.000	4.000
B OF TRI. HYETOGRAPH	(HR)	2.584	1.302	0.000	4.000
A OF NONDIM. HYETOGRAPH	( )	.354	.325	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.646	.325	0.000	1.000

***** NUMBER OF RAINSTORMS = 98 *****

TABLE 4B. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 4.0 HR
RAINFALL DEPTH RANGE .447 IN. (MEAN) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	4.000	0.000	4.000	4.000
DEPTH	(IN.)	1.014	.769	.460	4.350
INTENSITY	(IN./HR)	.253	.192	.115	1.088
FIRST TIME MOMENT	(HR)	1.595	.596	.693	3.128
SECOND TIME MOMENT	(HR*HR)	3.528	2.158	.895	10.813
TIME STANDARD DEVIATION	(HR)	.720	.186	.372	1.144
NONDIM. TIME STD.DEV.	( )	.180	.046	.093	.286
NONDIM. 2ND TIME MOMENT	( )	.220	.135	.056	.676
NONDIM. 1ST TIME MOMENT	( )	.399	.149	.173	.782
DEPTH STANDARD DEVIATION	(IN.)	.259	.244	.041	1.294
NONDIM. DEPTH STD.DEV.	( )	.241	.083	.071	.386
A OF TRI. HYETOGRAPH	(HR)	1.160	1.272	0.000	4.000
B OF TRI. HYETOGRAPH	(HR)	2.840	1.272	0.000	4.000
A OF NONDIM. HYETOGRAPH	( )	.290	.318	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.710	.318	0.000	1.000

***** NUMBER OF RAINSTORMS = 55 *****

TABLE 4C. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 4.0 HR
RAINFALL DEPTH RANGE .895 IN. (MEAN*2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	4.000	0.000	4.000	4.000
DEPTH	(IN.)	1.663	.977	.930	4.350
INTENSITY	(IN./HR)	.416	.244	.233	1.088
FIRST TIME MOMENT	(HR)	1.559	.668	.759	3.128
SECOND TIME MOMENT	(HR*HR)	3.398	2.552	.970	10.813
TIME STANDARD DEVIATION	(HR)	.664	.138	.401	.972
NONDIM. TIME STD.DEV.	( )	.166	.035	.100	.243
NONDIM. 2ND TIME MOMENT	( )	.212	.160	.061	.676
NONDIM. 1ST TIME MOMENT	( )	.390	.167	.190	.782
DEPTH STANDARD DEVIATION	(IN.)	.454	.312	.214	1.294
NONDIM. DEPTH STD.DEV.	( )	.266	.055	.181	.359
A OF TRI. HYETOGRAPH	(HR)	1.085	1.363	0.000	4.000
B OF TRI. HYETOGRAPH	(HR)	2.915	1.363	0.000	4.000
A OF NONDIM. HYETOGRAPH	( )	.271	.341	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.729	.341	0.000	1.000

***** NUMBER OF RAINSTORMS = 20 *****

TABLE 5A. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 5.0 HR
RAINFALL DEPTH RANGE .247 IN. (MEAN/2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	5.000	0.000	5.000	5.000
DEPTH	(IN.)	.701	.444	.250	2.210
INTENSITY	(IN./HR)	.140	.089	.050	.442
FIRST TIME MOMENT	(HR)	2.213	.546	1.079	3.421
SECOND TIME MOMENT	(HR*HR)	6.520	2.542	2.466	12.962
TIME STANDARD DEVIATION	(HR)	1.084	.264	.476	1.605
NONDIM. TIME STD.DEV.	( )	.217	.053	.095	.321
NONDIM. 2ND TIME MOMENT	( )	.261	.102	.099	.518
NONDIM. 1ST TIME MOMENT	( )	.443	.109	.216	.684
DEPTH STANDARD DEVIATION	(IN.)	.133	.119	.005	.604
NONDIM. DEPTH STD.DEV.	( )	.173	.064	.017	.364
A OF TRI. HYETOGRAPH	(HR)	1.763	1.421	0.000	5.000
B OF TRI. HYETOGRAPH	(HR)	3.237	1.421	0.000	5.000
A OF NONDIM. HYETOGRAPH	( )	.353	.284	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.647	.284	0.000	1.000

***** NUMBER OF RAINSTORMS = 63 *****

TABLE 5B. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 5.0 HR
RAINFALL DEPTH RANGE .494 IN. (MEAN) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	5.000	0.000	5.000	5.000
DEPTH	(IN.)	1.000	.408	.520	2.210
INTENSITY	(IN./HR)	.200	.082	.104	.442
FIRST TIME MOMENT	(HR)	2.205	.554	1.109	3.410
SECOND TIME MOMENT	(HR*HR)	6.307	2.603	2.466	12.962
TIME STANDARD DEVIATION	(HR)	1.003	.250	.476	1.460
NONDIM. TIME STD.DEV.	( )	.201	.050	.095	.292
NONDIM. 2ND TIME MOMENT	( )	.252	.104	.099	.518
NONDIM. 1ST TIME MOMENT	( )	.441	.111	.222	.682
DEPTH STANDARD DEVIATION	(IN.)	.201	.126	.054	.604
NONDIM. DEPTH STD.DEV.	( )	.192	.061	.090	.364
A OF TRI. HYETOGRAPH	(HR)	1.733	1.450	0.000	5.000
B OF TRI. HYETOGRAPH	(HR)	3.267	1.450	0.000	5.000
A OF NONDIM. HYETOGRAPH	( )	.347	.290	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.653	.290	0.000	1.000

***** NUMBER OF RAINSTORMS = 34 *****

TABLE 5C. APR-OCT RAINSTORM FROM HOURLY PRECIPITATION DATA AT STATION WASH. NATIONAL VA
DURATION TD = 5.0 HR
RAINFALL DEPTH RANGE .989 IN. (MEAN*2) < = DEPTH < 9999.0 IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(HR)	5.000	0.000	5.000	5.000
DEPTH	(IN.)	1.363	.343	1.030	2.210
INTENSITY	(IN./HR)	.273	.069	.206	.442
FIRST TIME MOMENT	(HR)	2.089	.623	1.109	3.410
SECOND TIME MOMENT	(HR*HR)	5.877	2.625	2.466	11.936
TIME STANDARD DEVIATION	(HR)	1.004	.251	.476	1.397
NONDIM. TIME STD.DEV.	( )	.201	.050	.095	.279
NONDIM. 2ND TIME MOMENT	( )	.235	.105	.099	.477
NONDIM. 1ST TIME MOMENT	( )	.418	.125	.222	.682
DEPTH STANDARD DEVIATION	(IN.)	.293	.135	.117	.604
NONDIM. DEPTH STD.DEV.	( )	.210	.070	.105	.364
A OF TRI. HYETOGRAPH	(HR)	1.509	1.493	0.000	5.000
B OF TRI. HYETOGRAPH	(HR)	3.491	1.493	0.000	5.000
A OF NONDIM. HYETOGRAPH	( )	.302	.299	0.000	1.000
B OF NONDIM. HYETOGRAPH	( )	.698	.299	0.000	1.000

***** NUMBER OF RAINSTORMS = 15 *****

III. SAMPLE RESULTS FROM ARS DATA

The detailed results of statistical analysis of the rainfall data of 5, 15, 30, and 60 minute recording time intervals derived from the USDA ARS break-point precipitation data for the "season" of 16 April to 15 October for each of the 13 stations are summarized in 936 tables. The stations are listed in Table 6 following the alphabetic order of the states.

For each station, the computed values of the statistical mean, standard deviation, and range of 14 rainstorm parameters are presented in 72 tables in the following order:

- Δt = 5 minutes

  7 durations: 10, 15, 20, 25, 30, 60, 120 minutes
  within each duration 3 depth ranges in the following order

  $D \geq 0.5\ D_{mean}$

  $D \geq D_{mean}$

  $D \geq 2\ D_{mean}$

- Δt = 15 minutes

  7 durations: 30, 45, 60, 120, 180, 240, 300 minutes
  within each duration 3 depth ranges as for Δt = 5 minutes

- Δt = 30 minutes

  6 durations: 60, 90, 120, 180, 240, 300 minutes
  within each duration 3 depth ranges as for Δt = 5 minutes

- Δt = 60 minutes

  4 durations: 120, 180, 240, 300 minutes
  within each duration 3 depth ranges as for Δt = 5 minutes.

In each table the statistical mean, standard deviation and range of 14 rainstorm parameters are presented in the following order, the same as the first 14 parameters for the NWS data.

(a) t_d, in minutes
(b) D, in inches
(c) i, in in./hr

(d) $\bar{t}$, in hours

(e) G, in hours square

(f) σ_t, in hours

(g) σ_t°

(h) G_1°,

(i) $\bar{t}^\circ$

(j) σ_d, in inches

(k) σ_d°

(l) $a = 3\bar{t} - t_d$, in minutes

(m) $b = t_d - a$, in minutes

(n) $a^\circ = a/t_d$

The value of b° can be computed as $1 - a^\circ$. The number of rainstorms in each class used to compute the statistical values in each table is also given.

The detailed results of statistical analysis for a sample ARS station, 00Y102 near Coshocton, Ohio are present in Tables 7 to 30 as an example.

TABLE 6. Station Location and Number of Rainstorms from ARS Agricultural Experimental Watersheds Precipitation Data

Location	Station No.	Number of rainstorms from data with recording time interval, Δt (min)			
		5	15	30	60
Bentonville, AR	000005	51	60	81	88
Safford, AZ	000002	256	241	248	221
Reynolds, ID	012X29	131	207	244	226
Treynor, IA	000011	173	241	271	261
McCreddie, MO	000004	568	673	838	800
Hastings, NE	RGPC31	199	251	314	320
Albuquerque, NM	000001	271	293	299	261
Coshocton, OH	00Y102	974	982	1056	893
Cherokee, OK	000C09	294	309	367	360
Guthrie, OK	000C12	543	375	338	290
Danville, VT	000001	424	542	613	513
Blacksburg, VA	P08R02	202	289	416	359
Moorefield, WV	R01P01	134	200	256	246

TABLE 7A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =10.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .033 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	10.000	0.000	10.000	10.000
DEPTH	(IN.)	.104	.090	.040	.590
INTENSITY	(IN./HR)	.627	.538	.240	3.540
FIRST TIME MOMENT	(HR)	.078	.018	.045	.119
SECOND TIME MOMENT	(HR*HR)	.008	.003	.003	.015
TIME STANDARD DEVIATION	(HR)	.044	.004	.029	.048
NONDIM. TIME STD.DEV.	( )	.264	.026	.172	.289
NONDIM. 2ND TIME MOMENT.	( )	.302	.109	.101	.548
NONDIM. 1ST TIME MOMENT	( )	.468	.109	.268	.714
DEPTH STANDARD DEVIATION	(IN.)	.021	.026	0.000	.180
NONDIM. DEPTH STD.DEV.	( )	.185	.132	0.000	.464
A OF TRI. HYETOGRAPH	(MIN)	4.113	3.108	0.000	10.000
B OF TRI. HYETOGRAPH	(MIN)	5.887	3.108	0.000	10.000
A OF NONDIM. HYETOGRAPH	( )	.411	.311	0.000	1.000

***** NUMBER OF RAINSTORMS = 241 *****

TABLE 7B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =10.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .066 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	10.000	0.000	10.000	10.000
DEPTH	(IN.)	.156	.099	.070	.590
INTENSITY	(IN./HR)	.934	.595	.420	3.540
FIRST TIME MOMENT	(HR)	.076	.019	.045	.119
SECOND TIME MOMENT	(HR*HR)	.008	.003	.003	.015
TIME STANDARD DEVIATION	(HR)	.044	.005	.029	.048
NONDIM. TIME STD.DEV.	( )	.261	.029	.172	.289
NONDIM. 2ND TIME MOMENT	( )	.289	.112	.101	.548
NONDIM. 1ST TIME MOMENT	( )	.456	.112	.268	.714
DEPTH STANDARD DEVIATION	(IN.)	.032	.031	0.000	.180
NONDIM. DEPTH STD.DEV.	( )	.199	.132	0.000	.464
A OF TRI. HYETOGRAPH	(MIN)	3.779	3.104	0.000	10.000
B OF TRI. HYETOGRAPH	(MIN)	6.221	3.104	0.000	10.000
A OF NONDIM. HYETOGRAPH	( )	.378	.310	0.000	1.000

***** NUMBER OF RAINSTORMS = 126 *****

TABLE 7C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =10.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .132 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	10.000	0.000	10.000	10.000
DEPTH	(IN.)	.241	.099	.140	.590
INTENSITY	(IN./HR)	1.448	.593	.840	3.540
FIRST TIME MOMENT	(HR)	.075	.018	.045	.117
SECOND TIME MOMENT	(HR*HR)	.008	.003	.003	.015
TIME STANDARD DEVIATION	(HR)	.044	.005	.029	.048
NONDIM. TIME STD.DEV.	( )	.262	.031	.172	.289
NONDIM. 2ND TIME MOMENT	( )	.281	.107	.101	.533
NONDIM. 1ST TIME MOMENT	( )	.448	.107	.268	.700
DEPTH STANDARD DEVIATION	(IN.)	.049	.039	0.000	.180
NONDIM. DEPTH STD.DEV.	( )	.199	.129	0.000	.464
A OF TRI. HYETOGRAPH	(MIN)	3.571	2.941	0.000	10.000
B OF TRI. HYETOGRAPH	(MIN)	6.429	2.941	0.000	10.000
A OF NONDIM. HYETOGRAPH	( )	.357	.294	0.000	1.000

***** NUMBER OF RAINSTORMS = 54 *****

TABLE 8A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =15.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .054 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	15.000	0.000	15.000	15.000
DEPTH	(IN.)	.185	.141	.060	.810
INTENSITY	(IN./HR)	.742	.566	.240	3.240
FIRST TIME MOMENT	(HR)	.111	.026	.051	.191
SECOND TIME MOMENT	(HR*HR)	.017	.006	.004	.039
TIME STANDARD DEVIATION	(HR)	.060	.008	.037	.081
NONDIM. TIME STD.DEV.	( )	.241	.032	.149	.324
NONDIM. 2ND TIME MOMENT	( )	.269	.100	.068	.620
NONDIM. 1ST TIME MOMENT	( )	.446	.106	.203	.764
DEPTH STANDARD DEVIATION	(IN.)	.035	.031	0.000	.164
NONDIM. DEPTH STD.DEV.	( )	.186	.082	0.000	.415
A OF TRI. HYETOGRAPH	(MIN)	5.302	4.183	0.000	15.000
B OF TRI. HYETOGRAPH	(MIN)	9.698	4.183	0.000	15.000
A OF NONDIM. HYETOGRAPH	( )	.353	.279	0.000	1.000

***** NUMBER OF RAINSTORMS = 177 *****

TABLE 8B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =15.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .108 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	15.000	0.000	15.000	15.000
DEPTH	(IN.)	.267	.141	.110	.810
INTENSITY	(IN./HR)	1.069	.564	.440	3.240
FIRST TIME MOMENT	(HR)	.112	.025	.053	.167
SECOND TIME MOMENT	(HR*HR)	.017	.006	.005	.031
TIME STANDARD DEVIATION	(HR)	.059	.008	.043	.078
NONDIM. TIME STD.DEV.	( )	.235	.031	.172	.313
NONDIM. 2ND TIME MOMENT	( )	.265	.094	.075	.502
NONDIM. 1ST TIME MOMENT	( )	.446	.100	.214	.667
DEPTH STANDARD DEVIATION	(IN.)	.051	.033	.002	.164
NONDIM. DEPTH STD.DEV.	( )	.192	.075	.009	.395
A OF TRI. HYETOGRAPH	(MIN)	5.324	4.079	0.000	15.000
B OF TRI. HYETOGRAPH	(MIN)	9.676	4.079	0.000	15.000
A OF NONDIM. HYETOGRAPH	( )	.355	.272	0.000	1.000

***** NUMBER OF RAINSTORMS = 100 *****

TABLE 8C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =15.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .216 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	15.000	0.000	15.000	15.000
DEPTH	(IN.)	.358	.127	.220	.810
INTENSITY	(IN./HR)	1.433	.507	.880	3.240
FIRST TIME MOMENT	(HR)	.117	.026	.057	.167
SECOND TIME MOMENT	(HR*HR)	.018	.006	.006	.031
TIME STANDARD DEVIATION	(HR)	.058	.008	.044	.078
NONDIM. TIME STD.DEV.	( )	.232	.032	.175	.313
NONDIM. 2ND TIME MOMENT	( )	.284	.102	.088	.502
NONDIM. 1ST TIME MOMENT	( )	.467	.104	.228	.667
DEPTH STANDARD DEVIATION	(IN.)	.068	.033	.002	.164
NONDIM. DEPTH STD.DEV.	( )	.194	.077	.009	.374
A OF TRI. HYETOGRAPH	(MIN)	6.246	4.305	0.000	15.000
B OF TRI. HYETOGRAPH	(MIN)	8.754	4.305	0.000	15.000
A OF NONDIM. HYETOGRAPH	( )	.416	.287	0.000	1.000

***** NUMBER OF RAINSTORMS = 56 *****

TABLE 9A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =20.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .050 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	20.000	0.000	20.000	20.000
DEPTH	(IN.)	.186	.158	.060	.800
INTENSITY	(IN./HR)	.558	.475	.180	2.400
FIRST TIME MOMENT	(HR)	.146	.042	.053	.261
SECOND TIME MOMENT	(HR*HR)	.029	.013	.005	.074
TIME STANDARD DEVIATION	(HR)	.078	.013	.047	.122
NONDIM. TIME STD.DEV.	( )	.233	.038	.142	.365
NONDIM. 2ND TIME MOMENT	( )	.264	.120	.045	.665
NONDIM. 1ST TIME MOMENT	( )	.439	.127	.159	.784
DEPTH STANDARD DEVIATION	(IN.)	.033	.033	.000	.184
NONDIM. DEPTH STD.DEV.	( )	.165	.079	.000	.385
A OF TRI. HYETOGRAPH	(MIN)	7.067	6.213	0.000	20.000
B OF TRI. HYETOGRAPH	(MIN)	12.933	6.213	0.000	20.000
A OF NONDIM. HYETOGRAPH	( )	.353	.311	0.000	1.000

***** NUMBER OF RAINSTORMS = 171 *****

TABLE 9B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =20.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .100 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	20.000	0.000	20.000	20.000
DEPTH	(IN.)	.266	.169	.110	.800
INTENSITY	(IN./HR)	.799	.506	.330	2.400
FIRST TIME MOMENT	(HR)	.139	.043	.053	.261
SECOND TIME MOMENT	(HR*HR)	.026	.013	.005	.074
TIME STANDARD DEVIATION	(HR)	.073	.012	.047	.103
NONDIM. TIME STD.DEV.	( )	.218	.035	.142	.310
NONDIM. 2ND TIME MOMENT	( )	.238	.117	.045	.665
NONDIM. 1ST TIME MOMENT	( )	.416	.129	.159	.784
DEPTH STANDARD DEVIATION	(IN.)	.049	.034	.002	.184
NONDIM. DEPTH STD.DEV.	( )	.188	.073	.016	.385
A OF TRI. HYETOGRAPH	(MIN)	5.980	6.191	0.000	20.000
B OF TRI. HYETOGRAPH	(MIN)	14.020	6.191	0.000	20.000
A OF NONDIM. HYETOGRAPH	( )	.299	.310	0.000	1.000

***** NUMBER OF RAINSTORMS = 98 *****

TABLE 9C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =20.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .200 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	20.000	0.000	20.000	20.000
DEPTH	(IN.)	.407	.156	.210	.800
INTENSITY	(IN./HR)	1.221	.469	.630	2.400
FIRST TIME MOMENT	(HR)	.143	.040	.066	.223
SECOND TIME MOMENT	(HR*HR)	.027	.012	.007	.053
TIME STANDARD DEVIATION	(HR)	.072	.012	.048	.103
NONDIM. TIME STD.DEV.	( )	.216	.035	.143	.310
NONDIM. 2ND TIME MOMENT	( )	.245	.108	.064	.480
NONDIM. 1ST TIME MOMENT	( )	.428	.121	.197	.668
DEPTH STANDARD DEVIATION	(IN.)	.075	.035	.023	.184
NONDIM. DEPTH STD.DEV.	( )	.187	.066	.058	.356
A OF TRI. HYETOGRAPH	(MIN)	6.457	6.273	0.000	20.000
B OF TRI. HYETOGRAPH	(MIN)	13.543	6.273	0.000	20.000
A OF NONDIM. HYETOGRAPH	( )	.323	.314	0.000	1.000

***** NUMBER OF RAINSTORMS = 45 *****

TABLE 10A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =25.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .067 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	25.000	0.000	25.000	25.000
DEPTH	(IN.)	.225	.179	.070	.870
INTENSITY	(IN./HR)	.541	.430	.168	2.088
FIRST TIME MOMENT	(HR)	.175	.049	.056	.312
SECOND TIME MOMENT	(HR*HR)	.043	.019	.007	.108
TIME STANDARD DEVIATION	(HR)	.100	.017	.063	.146
NONDIM. TIME STD.DEV.	( )	.240	.042	.151	.351
NONDIM. 2ND TIME MOMENT	( )	.249	.109	.041	.623
NONDIM. 1ST TIME MOMENT	( )	.419	.118	.134	.750
DEPTH STANDARD DEVIATION	(IN.)	.034	.034	0.000	.147
NONDIM. DEPTH STD.DEV.	( )	.134	.064	0.000	.366
A OF TRI. HYETOGRAPH	(MIN)	7.442	7.107	0.000	25.000
B OF TRI. HYETOGRAPH	(MIN)	17.558	7.107	0.000	25.000
A OF NONDIM. HYETOGRAPH	( )	.298	.284	0.000	1.000

***** NUMBER OF RAINSTORMS = 126 *****

TABLE 10B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =25.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .135 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	25.000	0.000	25.000	25.000
DEPTH	(IN.)	.329	.179	.140	.870
INTENSITY	(IN./HR)	.789	.430	.336	2.088
FIRST TIME MOMENT	(HR)	.168	.052	.056	.283
SECOND TIME MOMENT	(HR*HR)	.040	.019	.007	.088
TIME STANDARD DEVIATION	(HR)	.093	.017	.063	.146
NONDIM. TIME STD.DEV.	( )	.223	.041	.151	.351
NONDIM. 2ND TIME MOMENT	( )	.229	.109	.041	.507
NONDIM. 1ST TIME MOMENT	( )	.402	.124	.134	.680
DEPTH STANDARD DEVIATION	(IN.)	.052	.035	.009	.147
NONDIM. DEPTH STD.DEV.	( )	.157	.057	.055	.366
A OF TRI. HYETOGRAPH	(MIN)	6.786	7.201	0.000	25.000
B OF TRI. HYETOGRAPH	(MIN)	18.214	7.201	0.000	25.000
A OF NONDIM. HYETOGRAPH	( )	.271	.288	0.000	1.000

***** NUMBER OF RAINSTORMS = 71 *****

TABLE 10C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =25.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .270 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	25.000	0.000	25.000	25.000
DEPTH	(IN.)	.452	.153	.270	.870
INTENSITY	(IN./HR)	1.086	.366	.648	2.088
FIRST TIME MOMENT	(HR)	.167	.052	.056	.282
SECOND TIME MOMENT	(HR*HR)	.038	.018	.007	.084
TIME STANDARD DEVIATION	(HR)	.088	.015	.063	.120
NONDIM. TIME STD.DEV.	( )	.210	.037	.151	.287
NONDIM. 2ND TIME MOMENT	( )	.220	.104	.041	.481
NONDIM. 1ST TIME MOMENT	( )	.400	.125	.134	.676
DEPTH STANDARD DEVIATION	(IN.)	.073	.033	.019	.147
NONDIM. DEPTH STD.DEV.	( )	.162	.060	.055	.366
A OF TRI. HYETOGRAPH	(MIN)	6.812	6.838	0.000	25.000
B OF TRI. HYETOGRAPH	(MIN)	18.188	6.838	0.000	25.000
A OF NONDIM. HYETOGRAPH	( )	.272	.274	0.000	1.000

***** NUMBER OF RAINSTORMS = 39 *****

TABLE 11A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .054 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.197	.159	.060	1.060
INTENSITY	(IN./HR)	.393	.318	.120	2.120
FIRST TIME MOMENT	(HR)	.211	.064	.069	.398
SECOND TIME MOMENT	(HR*HR)	.063	.030	.013	.174
TIME STANDARD DEVIATION	(HR)	.118	.023	.070	.167
NONDIM. TIME STD.DEV.	( )	.236	.047	.141	.333
NONDIM. 2ND TIME MOMENT	( )	.252	.119	.052	.696
NONDIM. 1ST TIME MOMENT	( )	.421	.128	.138	.796
DEPTH STANDARD DEVIATION	(IN.)	.027	.027	0.000	.155
NONDIM. DEPTH STD.DEV.	( )	.124	.070	0.000	.324
A OF TRI. HYETOGRAPH	(MIN)	9.555	8.741	0.000	30.000
B OF TRI. HYETOGRAPH	(MIN)	20.445	8.741	0.000	30.000
A OF NONDIM. HYETOGRAPH	( )	.319	.291	0.000	1.000

***** NUMBER OF RAINSTORMS = 153 *****

TABLE 11B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .108 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.278	.161	.110	1.060
INTENSITY	(IN./HR)	.556	.322	.220	2.120
FIRST TIME MOMENT	(HR)	.198	.066	.069	.356
SECOND TIME MOMENT	(HR*HR)	.056	.030	.013	.131
TIME STANDARD DEVIATION	(HR)	.110	.024	.070	.166
NONDIM. TIME STD.DEV.	( )	.219	.048	.141	.332
NONDIM. 2ND TIME MOMENT	( )	.224	.119	.052	.525
NONDIM. 1ST TIME MOMENT	( )	.395	.133	.138	.711
DEPTH STANDARD DEVIATION	(IN.)	.041	.027	.000	.155
NONDIM. DEPTH STD.DEV.	( )	.150	.061	.000	.324
A OF TRI. HYETOGRAPH	(MIN)	8.002	8.976	0.000	30.000
B OF TRI. HYETOGRAPH	(MIN)	21.998	8.976	0.000	30.000
A OF NONDIM. HYETOGRAPH	( )	.267	.299	0.000	1.000

***** NUMBER OF RAINSTORMS = 91 *****

TABLE 11C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .216 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.384	.151	.220	1.060
INTENSITY	(IN./HR)	.769	.302	.440	2.120
FIRST TIME MOMENT	(HR)	.196	.056	.094	.313
SECOND TIME MOMENT	(HR*HR)	.053	.025	.015	.109
TIME STANDARD DEVIATION	(HR)	.105	.021	.071	.152
NONDIM. TIME STD.DEV.	( )	.210	.043	.141	.304
NONDIM. 2ND TIME MOMENT	( )	.211	.099	.059	.434
NONDIM. 1ST TIME MOMENT	( )	.391	.113	.188	.625
DEPTH STANDARD DEVIATION	(IN.)	.056	.028	.013	.155
NONDIM. DEPTH STD.DEV.	( )	.147	.047	.054	.256
A OF TRI. HYETOGRAPH	(MIN)	7.027	8.123	0.000	26.294
B OF TRI. HYETOGRAPH	(MIN)	22.973	8.123	3.706	30.000
A OF NONDIM. HYETOGRAPH	( )	.234	.271	0.000	.876

***** NUMBER OF RAINSTORMS = 49 *****

TABLE 12A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .066 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.225	.166	.070	.800
INTENSITY	(IN./HR)	.225	.166	.070	.800
FIRST TIME MOMENT	(HR)	.415	.156	.115	.855
SECOND TIME MOMENT	(HR*HR)	.263	.151	.030	.759
TIME STANDARD DEVIATION	(HR)	.252	.055	.120	.347
NONDIM. TIME STD.DEV.	( )	.252	.055	.120	.347
NONDIM. 2ND TIME MOMENT	( )	.263	.151	.030	.759
NONDIM. 1ST TIME MOMENT	( )	.415	.156	.115	.855
DEPTH STANDARD DEVIATION	(IN.)	.019	.021	0.000	.076
NONDIM. DEPTH STD.DEV.	( )	.073	.047	0.000	.193
A OF TRI. HYETOGRAPH	(MIN)	18.557	18.911	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	41.443	18.911	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.309	.315	0.000	1.000

***** NUMBER OF RAINSTORMS = 80 *****

TABLE 12B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .132 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.309	.163	.140	.800
INTENSITY	(IN./HR)	.309	.163	.140	.800
FIRST TIME MOMENT	(HR)	.395	.171	.115	.831
SECOND TIME MOMENT	(HR*HR)	.246	.161	.030	.715
TIME STANDARD DEVIATION	(HR)	.241	.059	.120	.347
NONDIM. TIME STD.DEV.	( )	.241	.059	.120	.347
NONDIM. 2ND TIME MOMENT	( )	.246	.161	.030	.715
NONDIM. 1ST TIME MOMENT	( )	.395	.171	.115	.831
DEPTH STANDARD DEVIATION	(IN.)	.028	.022	.002	.076
NONDIM. DEPTH STD.DEV.	( )	.084	.047	.012	.193
A OF TRI. HYETOGRAPH	(MIN)	17.095	20.248	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	42.905	20.248	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.285	.337	0.000	1.000

***** NUMBER OF RAINSTORMS = 49 *****

TABLE 12C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .265 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.455	.136	.280	.800
INTENSITY	(IN./HR)	.455	.136	.280	.800
FIRST TIME MOMENT	(HR)	.344	.188	.115	.791
SECOND TIME MOMENT	(HR*HR)	.204	.180	.030	.665
TIME STANDARD DEVIATION	(HR)	.220	.065	.120	.340
NONDIM. TIME STD.DEV.	( )	.220	.065	.120	.340
NONDIM. 2ND TIME MOMENT	( )	.204	.180	.030	.665
NONDIM. 1ST TIME MOMENT	( )	.344	.188	.115	.791
DEPTH STANDARD DEVIATION	(IN.)	.048	.016	.017	.076
NONDIM. DEPTH STD.DEV.	( )	.108	.037	.057	.193
A OF TRI. HYETOGRAPH	(MIN)	12.285	21.613	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	47.715	21.613	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.205	.360	0.000	1.000

***** NUMBER OF RAINSTORMS = 22 *****

TABLE 13A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .121 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.488	.678	.150	3.610
INTENSITY	(IN./HR)	.244	.339	.075	1.805
FIRST TIME MOMENT	(HR)	.955	.282	.262	1.417
SECOND TIME MOMENT	(HR*HR)	1.242	.538	.229	2.270
TIME STANDARD DEVIATION	(HR)	.494	.107	.285	.693
NONDIM. TIME STD.DEV.	( )	.247	.054	.143	.346
NONDIM. 2ND TIME MOMENT	( )	.311	.134	.057	.568
NONDIM. 1ST TIME MOMENT	( )	.477	.141	.131	.708
DEPTH STANDARD DEVIATION	(IN.)	.019	.022	.002	.081
NONDIM. DEPTH STD.DEV.	( )	.040	.024	.011	.111
A OF TRI. HYETOGRAPH	(MIN)	56.691	39.199	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	63.309	39.199	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.472	.327	0.000	1.000

***** NUMBER OF RAINSTORMS = 26 *****

TABLE 13B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .242 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.712	.832	.280	3.610
INTENSITY	(IN./HR)	.356	.416	.140	1.805
FIRST TIME MOMENT	(HR)	1.024	.248	.512	1.417
SECOND TIME MOMENT	(HR*HR)	1.344	.519	.481	2.270
TIME STANDARD DEVIATION	(HR)	.476	.116	.285	.693
NONDIM. TIME STD.DEV.	( )	.238	.058	.143	.346
NONDIM. 2ND TIME MOMENT	( )	.336	.130	.120	.568
NONDIM. 1ST TIME MOMENT	( )	.512	.124	.256	.708
DEPTH STANDARD DEVIATION	(IN.)	.028	.025	.003	.081
NONDIM. DEPTH STD.DEV.	( )	.040	.021	.011	.092
A OF TRI. HYETOGRAPH	(MIN)	65.095	39.329	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	54.905	39.329	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.542	.328	0.000	1.000

***** NUMBER OF RAINSTORMS = 15 *****

TABLE 13C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =5 MIN (1937-78)
RAINFALL DEPTH RANGE .485 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	1.153	1.090	.590	3.610
INTENSITY	(IN./HR)	.576	.545	.295	1.805
FIRST TIME MOMENT	(HR)	1.054	.298	.512	1.417
SECOND TIME MOMENT	(HR*HR)	1.410	.588	.481	2.270
TIME STANDARD DEVIATION	(HR)	.460	.122	.285	.649
NONDIM. TIME STD.DEV.	( )	.230	.061	.143	.325
NONDIM. 2ND TIME MOMENT	( )	.353	.147	.120	.568
NONDIM. 1ST TIME MOMENT	( )	.527	.149	.256	.708
DEPTH STANDARD DEVIATION	(IN.)	.047	.024	.016	.081
NONDIM. DEPTH STD.DEV.	( )	.050	.024	.020	.092
A OF TRI. HYETOGRAPH	(MIN)	71.495	42.520	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	48.505	42.520	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.596	.354	0.000	1.000

***** NUMBER OF RAINSTORMS = 7 *****

TABLE 14A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .052 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.181	.149	.060	.870
INTENSITY	(IN./HR)	.361	.298	.120	1.740
FIRST TIME MOMENT	(HR)	.227	.066	.128	.365
SECOND TIME MOMENT	(HR*HR)	.072	.033	.023	.141
TIME STANDARD DEVIATION	(HR)	.125	.018	.078	.144
NONDIM. TIME STD.DEV.	( )	.250	.037	.155	.289
NONDIM. 2ND TIME MOMENT	( )	.287	.131	.090	.563
NONDIM. 1ST TIME MOMENT	( )	.454	.131	.257	.729
DEPTH STANDARD DEVIATION	(IN.)	.045	.052	0.000	.344
NONDIM. DEPTH STD.DEV.	( )	.237	.145	0.000	.487
A OF TRI. HYETOGRAPH	(MIN)	11.501	10.452	0.000	30.000
B OF TRI. HYETOGRAPH	(MIN)	18.499	10.452	0.000	30.000
A OF NONDIM. HYETOGRAPH	( )	.383	.348	0.000	1.000

***** NUMBER OF RAINSTORMS = 360 *****

TABLE 14B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .103 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.263	.156	.110	.870
INTENSITY	(IN./HR)	.525	.312	.220	1.740
FIRST TIME MOMENT	(HR)	.219	.069	.128	.362
SECOND TIME MOMENT	(HR*HR)	.068	.035	.023	.139
TIME STANDARD DEVIATION	(HR)	.121	.020	.078	.144
NONDIM. TIME STD.DEV.	( )	.243	.040	.155	.289
NONDIM. 2ND TIME MOMENT	( )	.272	.139	.090	.558
NONDIM. 1ST TIME MOMENT	( )	.439	.139	.257	.724
DEPTH STANDARD DEVIATION	(IN.)	.068	.059	0.000	.344
NONDIM. DEPTH STD.DEV.	( )	.265	.146	0.000	.487
A OF TRI. HYETOGRAPH	(MIN)	10.600	10.872	0.000	30.000
B OF TRI. HYETOGRAPH	(MIN)	19.400	10.872	0.000	30.000
A OF NONDIM. HYETOGRAPH	( )	.353	.362	0.000	1.000

***** NUMBER OF RAINSTORMS = 201 *****

TABLE 14C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =30.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .206 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	30.000	0.000	30.000	30.000
DEPTH	(IN.)	.379	.144	.210	.870
INTENSITY	(IN./HR)	.757	.288	.420	1.740
FIRST TIME MOMENT	(HR)	.222	.069	.129	.360
SECOND TIME MOMENT	(HR*HR)	.069	.035	.023	.138
TIME STANDARD DEVIATION	(HR)	.122	.020	.079	.144
NONDIM. TIME STD.DEV.	( )	.244	.040	.158	.289
NONDIM. 2ND TIME MOMENT	( )	.277	.138	.092	.553
NONDIM. 1ST TIME MOMENT	( )	.444	.138	.258	.720
DEPTH STANDARD DEVIATION	(IN.)	.096	.071	0.000	.344
NONDIM. DEPTH STD.DEV.	( )	.255	.153	0.000	.483
A OF TRI. HYETOGRAPH	(MIN)	11.018	10.799	0.000	30.000
B OF TRI. HYETOGRAPH	(MIN)	18.982	10.799	0.000	30.000
A OF NONDIM. HYETOGRAPH	( )	.367	.360	0.000	1.000

***** NUMBER OF RAINSTORMS = 101 *****

TABLE 15A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =45.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .075 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	45.000	0.000	45.000	45.000
DEPTH	(IN.)	.258	.206	.080	1.120
INTENSITY	(IN./HR)	.344	.275	.107	1.493
FIRST TIME MOMENT	(HR)	.316	.099	.134	.565
SECOND TIME MOMENT	(HR*HR)	.139	.069	.026	.345
TIME STANDARD DEVIATION	(HR)	.168	.029	.092	.243
NONDIM. TIME STD.DEV.	( )	.223	.039	.123	.324
NONDIM. 2ND TIME MOMENT	( )	.247	.123	.047	.614
NONDIM. 1ST TIME MOMENT	( )	.422	.132	.178	.753
DEPTH STANDARD DEVIATION	(IN.)	.064	.060	0.000	.307
NONDIM. DEPTH STD.DEV.	( )	.232	.100	0.000	.454
A OF TRI. HYETOGRAPH	(MIN)	14.364	13.772	0.000	45.000
B OF TRI. HYETOGRAPH	(MIN)	30.636	13.772	0.000	45.000
A OF NONDIM. HYETOGRAPH	( )	.319	.306	0.000	1.000

***** NUMBER OF RAINSTORMS = 239 *****

TABLE 15B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =45.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .150 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	45.000	0.000	45.000	45.000
DEPTH	(IN.)	.341	.214	.150	1.120
INTENSITY	(IN./HR)	.455	.285	.200	1.493
FIRST TIME MOMENT	(HR)	.298	.095	.134	.565
SECOND TIME MOMENT	(HR*HR)	.124	.063	.026	.345
TIME STANDARD DEVIATION	(HR)	.159	.027	.092	.228
NONDIM. TIME STD.DEV.	( )	.212	.036	.123	.304
NONDIM. 2ND TIME MOMENT	( )	.220	.113	.047	.614
NONDIM. 1ST TIME MOMENT	( )	.398	.126	.178	.753
DEPTH STANDARD DEVIATION	(IN.)	.088	.063	.000	.307
NONDIM. DEPTH STD.DEV.	( )	.255	.094	.000	.454
A OF TRI. HYETOGRAPH	(MIN)	11.881	12.641	0.000	45.000
B OF TRI. HYETOGRAPH	(MIN)	33.119	12.641	0.000	45.000
A OF NONDIM. HYETOGRAPH	( )	.264	.281	0.000	1.000

***** NUMBER OF RAINSTORMS = 155 *****

TABLE 15C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =45.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .299 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	45.000	0.000	45.000	45.000
DEPTH	(IN.)	.525	.214	.300	1.120
INTENSITY	(IN./HR)	.700	.286	.400	1.493
FIRST TIME MOMENT	(HR)	.287	.095	.134	.565
SECOND TIME MOMENT	(HR*HR)	.115	.063	.026	.345
TIME STANDARD DEVIATION	(HR)	.153	.024	.092	.228
NONDIM. TIME STD.DEV.	( )	.203	.031	.123	.304
NONDIM. 2ND TIME MOMENT	( )	.205	.111	.047	.614
NONDIM. 1ST TIME MOMENT	( )	.383	.126	.178	.753
DEPTH STANDARD DEVIATION	(IN.)	.139	.063	.031	.307
NONDIM. DEPTH STD.DEV.	( )	.272	.086	.071	.454
A OF TRI. HYETOGRAPH	(MIN)	10.445	12.214	0.000	45.000
B OF TRI. HYETOGRAPH	(MIN)	34.555	12.214	0.000	45.000
A OF NONDIM. HYETOGRAPH	( )	.232	.271	0.000	1.000

***** NUMBER OF RAINSTORMS = 66 *****

TABLE 16A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .079 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.252	.217	.080	1.290
INTENSITY	(IN./HR)	.252	.217	.080	1.290
FIRST TIME MOMENT	(HR)	.439	.127	.149	.835
SECOND TIME MOMENT	(HR*HR)	.262	.123	.040	.724
TIME STANDARD DEVIATION	(HR)	.228	.043	.132	.351
NONDIM. TIME STD.DEV.	( )	.228	.043	.132	.351
NONDIM. 2ND TIME MOMENT	( )	.262	.123	.040	.724
NONDIM. 1ST TIME MOMENT	( )	.439	.127	.149	.835
DEPTH STANDARD DEVIATION	(IN.)	.051	.054	.003	.293
NONDIM. DEPTH STD.DEV.	( )	.180	.079	.034	.405
A OF TRI. HYETOGRAPH	(MIN)	20.954	17.747	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	39.046	17.747	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.349	.296	0.000	1.000

***** NUMBER OF RAINSTORMS = 224 *****

TABLE 16B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .158 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.389	.232	.160	1.290
INTENSITY	(IN./HR)	.389	.232	.160	1.290
FIRST TIME MOMENT	(HR)	.418	.135	.149	.764
SECOND TIME MOMENT	(HR*HR)	.241	.126	.040	.622
TIME STANDARD DEVIATION	(HR)	.215	.043	.132	.351
NONDIM. TIME STD.DEV.	( )	.215	.043	.132	.351
NONDIM. 2ND TIME MOMENT	( )	.241	.126	.040	.622
NONDIM. 1ST TIME MOMENT	( )	.418	.135	.149	.764
DEPTH STANDARD DEVIATION	(IN.)	.083	.058	.011	.293
NONDIM. DEPTH STD.DEV.	( )	.208	.074	.053	.405
A OF TRI. HYETOGRAPH	(MIN)	18.562	18.497	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	41.438	18.497	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.309	.308	0.000	1.000

***** NUMBER OF RAINSTORMS = 114 *****

TABLE 16C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .316 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.555	.226	.320	1.290
INTENSITY	(IN./HR)	.555	.226	.320	1.290
FIRST TIME MOMENT	(HR)	.400	.137	.149	.764
SECOND TIME MOMENT	(HR*HR)	.224	.131	.040	.622
TIME STANDARD DEVIATION	(HR)	.210	.043	.132	.334
NONDIM. TIME STD.DEV.	( )	.210	.043	.132	.334
NONDIM. 2ND TIME MOMENT	( )	.224	.131	.040	.622
NONDIM. 1ST TIME MOMENT	( )	.400	.137	.149	.764
DEPTH STANDARD DEVIATION	(IN.)	.123	.056	.023	.293
NONDIM. DEPTH STD.DEV.	( )	.224	.063	.065	.405
A OF TRI. HYETOGRAPH	(MIN)	15.521	18.820	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	44.479	18.820	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.259	.314	0.000	1.000

***** NUMBER OF RAINSTORMS = 57 *****

TABLE 17A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .135 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.430	.343	.140	1.900
INTENSITY	(IN./HR)	.215	.172	.070	.950
FIRST TIME MOMENT	(HR)	.814	.258	.204	1.445
SECOND TIME MOMENT	(HR*HR)	.968	.459	.128	2.334
TIME STANDARD DEVIATION	(HR)	.477	.106	.188	.719
NONDIM. TIME STD.DEV.	( )	.239	.053	.094	.360
NONDIM. 2ND TIME MOMENT	( )	.242	.115	.032	.583
NONDIM. 1ST TIME MOMENT	( )	.407	.129	.102	.722
DEPTH STANDARD DEVIATION	(IN.)	.055	.054	.008	.236
NONDIM. DEPTH STD.DEV.	( )	.119	.054	.047	.293
A OF TRI. HYETOGRAPH	(MIN)	34.648	34.846	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	85.352	34.846	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.289	.290	0.000	1.000

***** NUMBER OF RAINSTORMS = 79 *****

TABLE 17B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .269 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.657	.345	.270	1.900
INTENSITY	(IN./HR)	.328	.172	.135	.950
FIRST TIME MOMENT	(HR)	.799	.265	.287	1.445
SECOND TIME MOMENT	(HR*HR)	.930	.480	.134	2.334
TIME STANDARD DEVIATION	(HR)	.458	.119	.188	.719
NONDIM. TIME STD.DEV.	( )	.229	.060	.094	.360
NONDIM. 2ND TIME MOMENT	( )	.233	.120	.034	.583
NONDIM. 1ST TIME MOMENT	( )	.399	.132	.144	.722
DEPTH STANDARD DEVIATION	(IN.)	.088	.057	.017	.236
NONDIM. DEPTH STD.DEV.	( )	.130	.049	.047	.252
A OF TRI. HYETOGRAPH	(MIN)	32.851	34.189	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	87.149	34.189	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.274	.285	0.000	1.000

***** NUMBER OF RAINSTORMS = 41 *****

TABLE 17C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .538 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.897	.303	.550	1.900
INTENSITY	(IN./HR)	.448	.152	.275	.950
FIRST TIME MOMENT	(HR)	.808	.285	.315	1.445
SECOND TIME MOMENT	(HR*HR)	.938	.527	.134	2.334
TIME STANDARD DEVIATION	(HR)	.439	.131	.188	.719
NONDIM. TIME STD.DEV.	( )	.219	.066	.094	.360
NONDIM. 2ND TIME MOMENT	( )	.235	.132	.034	.583
NONDIM. 1ST TIME MOMENT	( )	.404	.142	.158	.722
DEPTH STANDARD DEVIATION	(IN.)	.124	.051	.042	.236
NONDIM. DEPTH STD.DEV.	( )	.139	.044	.076	.250
A OF TRI. HYETOGRAPH	(MIN)	34.751	36.401	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	85.249	36.401	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.290	.303	0.000	1.000

***** NUMBER OF RAINSTORMS = 22 *****

TABLE 18A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .235 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	.729	.542	.250	2.410
INTENSITY	(IN./HR)	.243	.181	.083	.803
FIRST TIME MOMENT	(HR)	1.126	.468	.282	2.538
SECOND TIME MOMENT	(HR*HR)	1.920	1.300	.298	6.665
TIME STANDARD DEVIATION	(HR)	.645	.149	.383	1.073
NONDIM. TIME STD.DEV.	( )	.215	.050	.128	.358
NONDIM. 2ND TIME MOMENT	( )	.213	.144	.033	.741
NONDIM. 1ST TIME MOMENT	( )	.375	.156	.094	.846
DEPTH STANDARD DEVIATION	(IN.)	.073	.063	.008	.288
NONDIM. DEPTH STD.DEV.	( )	.098	.043	.028	.220
A OF TRI. HYETOGRAPH	(MIN)	42.551	53.082	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	137.449	53.082	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.236	.295	0.000	1.000

***** NUMBER OF RAINSTORMS = 37 *****

TABLE 18B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .471 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	1.032	.549	.480	2.410
INTENSITY	(IN./HR)	.344	.183	.160	.803
FIRST TIME MOMENT	(HR)	1.130	.503	.474	2.538
SECOND TIME MOMENT	(HR*HR)	1.913	1.464	.523	6.665
TIME STANDARD DEVIATION	(HR)	.617	.118	.383	.836
NONDIM. TIME STD.DEV.	( )	.206	.039	.128	.279
NONDIM. 2ND TIME MOMENT	( )	.213	.163	.058	.741
NONDIM. 1ST TIME MOMENT	( )	.377	.168	.158	.846
DEPTH STANDARD DEVIATION	(IN.)	.105	.065	.023	.288
NONDIM. DEPTH STD.DEV.	( )	.102	.043	.046	.220
A OF TRI. HYETOGRAPH	(MIN)	39.493	59.777	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	140.507	59.777	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.219	.332	0.000	1.000

***** NUMBER OF RAINSTORMS = 21 *****

TABLE 18C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .941 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	1.497	.446	.970	2.410
INTENSITY	(IN./HR)	.499	.149	.323	.803
FIRST TIME MOMENT	(HR)	1.162	.432	.702	1.943
SECOND TIME MOMENT	(HR*HR)	1.881	1.169	.825	4.114
TIME STANDARD DEVIATION	(HR)	.599	.053	.483	.677
NONDIM. TIME STD.DEV.	( )	.200	.018	.161	.226
NONDIM. 2ND TIME MOMENT	( )	.209	.130	.092	.457
NONDIM. 1ST TIME MOMENT	( )	.387	.144	.234	.648
DEPTH STANDARD DEVIATION	(IN.)	.146	.065	.056	.288
NONDIM. DEPTH STD.DEV.	( )	.095	.020	.058	.119
A OF TRI. HYETOGRAPH	(MIN)	44.611	63.888	0.000	169.772
B OF TRI. HYETOGRAPH	(MIN)	135.389	63.888	10.228	180.000
A OF NONDIM. HYETOGRAPH	( )	.248	.355	0.000	.943

***** NUMBER OF RAINSTORMS = 10 *****

TABLE 19A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .155 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.404	.312	.160	1.280
INTENSITY	(IN./HR)	.101	.078	.040	.320
FIRST TIME MOMENT	(HR)	1.914	.449	.754	2.810
SECOND TIME MOMENT	(HR*HR)	4.926	1.770	.974	8.685
TIME STANDARD DEVIATION	(HR)	1.007	.234	.525	1.537
NONDIM. TIME STD.DEV.	( )	.252	.058	.131	.384
NONDIM. 2ND TIME MOMENT	( )	.308	.111	.061	.543
NONDIM. 1ST TIME MOMENT	( )	.479	.112	.189	.703
DEPTH STANDARD DEVIATION	(IN.)	.024	.027	.003	.117
NONDIM. DEPTH STD.DEV.	( )	.055	.031	.014	.164
A OF TRI. HYETOGRAPH	(MIN)	107.303	68.572	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	132.697	68.572	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.447	.286	0.000	1.000

***** NUMBER OF RAINSTORMS = 28 *****

TABLE 19B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .310 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.670	.363	.320	1.280
INTENSITY	(IN./HR)	.168	.091	.080	.320
FIRST TIME MOMENT	(HR)	2.152	.465	1.495	2.810
SECOND TIME MOMENT	(HR*HR)	5.834	1.881	3.126	8.685
TIME STANDARD DEVIATION	(HR)	.972	.264	.525	1.521
NONDIM. TIME STD.DEV.	( )	.243	.066	.131	.380
NONDIM. 2ND TIME MOMENT	( )	.365	.118	.195	.543
NONDIM. 1ST TIME MOMENT	( )	.538	.116	.374	.703
DEPTH STANDARD DEVIATION	(IN.)	.042	.036	.014	.117
NONDIM. DEPTH STD.DEV.	( )	.059	.025	.034	.110
A OF TRI. HYETOGRAPH	(MIN)	143.223	77.738	29.125	240.000
B OF TRI. HYETOGRAPH	(MIN)	96.777	77.738	0.000	210.875
A OF NONDIM. HYETOGRAPH	( )	.597	.324	.121	1.000

***** NUMBER OF RAINSTORMS = 11 *****

TABLE 19C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .621 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	1.000	.269	.690	1.280
INTENSITY	(IN./HR)	.250	.067	.173	.320
FIRST TIME MOMENT	(HR)	2.201	.382	1.721	2.612
SECOND TIME MOMENT	(HR*HR)	6.032	1.327	3.782	7.097
TIME STANDARD DEVIATION	(HR)	.972	.399	.525	1.521
NONDIM. TIME STD.DEV.	( )	.243	.100	.131	.380
NONDIM. 2ND TIME MOMENT	( )	.377	.083	.236	.444
NONDIM. 1ST TIME MOMENT	( )	.550	.095	.430	.653
DEPTH STANDARD DEVIATION	(IN.)	.070	.038	.031	.117
NONDIM. DEPTH STD.DEV.	( )	.070	.032	.034	.110
A OF TRI. HYETOGRAPH	(MIN)	156.111	68.707	69.701	230.104
B OF TRI. HYETOGRAPH	(MIN)	83.889	68.707	9.896	170.299
A OF NONDIM. HYETOGRAPH	( )	.650	.286	.290	.959

***** NUMBER OF RAINSTORMS = 5 *****

TABLE 20A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .198 (MEAN*0.5) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.468	.244	.230	1.020
INTENSITY	(IN./HR)	.094	.049	.046	.204
FIRST TIME MOMENT	(HR)	2.523	.700	.820	3.507
SECOND TIME MOMENT	(HR*HR)	8.539	3.632	1.079	14.521
TIME STANDARD DEVIATION	(HR)	1.280	.289	.637	1.813
NONDIM. TIME STD.DEV.	( )	.256	.058	.127	.363
NONDIM. 2ND TIME MOMENT	( )	.342	.145	.043	.581
NONDIM. 1ST TIME MOMENT	( )	.505	.140	.164	.701
DEPTH STANDARD DEVIATION	(IN.)	.024	.022	.001	.084
NONDIM. DEPTH STD.DEV.	( )	.048	.034	.004	.145
A OF TRI. HYETOGRAPH	(MIN)	163.729	96.679	0.000	300.000
B OF TRI. HYETOGRAPH	(MIN)	136.271	96.679	0.000	300.000
A OF NONDIM. HYETOGRAPH	( )	.546	.322	0.000	1.000

***** NUMBER OF RAINSTORMS = 15 *****

TABLE 20B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .395 (MEAN) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.661	.232	.410	1.020
INTENSITY	(IN./HR)	.132	.046	.082	.204
FIRST TIME MOMENT	(HR)	2.295	.938	.820	3.507
SECOND TIME MOMENT	(HR*HR)	7.555	4.671	1.079	14.210
TIME STANDARD DEVIATION	(HR)	1.200	.328	.637	1.555
NONDIM. TIME STD.DEV.	( )	.240	.066	.127	.311
NONDIM. 2ND TIME MOMENT	( )	.302	.187	.043	.568
NONDIM. 1ST TIME MOMENT	( )	.459	.188	.164	.701
DEPTH STANDARD DEVIATION	(IN.)	.039	.024	.011	.084
NONDIM. DEPTH STD.DEV.	( )	.062	.041	.027	.145
A OF TRI. HYETOGRAPH	(MIN)	134.175	123.137	0.000	300.000
B OF TRI. HYETOGRAPH	(MIN)	165.825	123.137	0.000	300.000
A OF NONDIM. HYETOGRAPH	( )	.447	.410	0.000	1.000

***** NUMBER OF RAINSTORMS = 7 *****

TABLE 20C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL =15 MIN (1937-78)
RAINFALL DEPTH RANGE .791 (MEAN*2.0) IN. <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.970	.071	.920	1.020
INTENSITY	(IN./HR)	.194	.014	.184	.204
FIRST TIME MOMENT	(HR)	1.900	.537	1.521	2.280
SECOND TIME MOMENT	(HR*HR)	5.050	2.820	3.056	7.044
TIME STANDARD DEVIATION	(HR)	1.111	.352	.862	1.359
NONDIM. TIME STD.DEV.	( )	.222	.070	.172	.272
NONDIM. 2ND TIME MOMENT	( )	.202	.113	.122	.282
NONDIM. 1ST TIME MOMENT	( )	.380	.107	.304	.456
DEPTH STANDARD DEVIATION	(IN.)	.044	.020	.030	.058
NONDIM. DEPTH STD.DEV.	( )	.044	.017	.032	.056
A OF TRI. HYETOGRAPH	(MIN)	55.161	78.009	0.000	110.322
B OF TRI. HYETOGRAPH	(MIN)	244.839	78.009	189.678	300.000
A OF NONDIM. HYETOGRAPH	( )	.184	.260	0.000	.368

***** NUMBER OF RAINSTORMS = 2 *****

TABLE 21A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .073 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.248	.200	.080	1.120
INTENSITY	(IN./HR)	.248	.200	.080	1.120
FIRST TIME MOMENT	(HR)	.431	.134	.253	.730
SECOND TIME MOMENT	(HR*HR)	.265	.134	.087	.563
TIME STANDARD DEVIATION	(HR)	.243	.040	.150	.289
NONDIM. TIME STD.DEV.	( )	.243	.040	.150	.289
NONDIM. 2ND TIME MOMENT	( )	.265	.134	.087	.563
NONDIM. 1ST TIME MOMENT	( )	.431	.134	.253	.730
DEPTH STANDARD DEVIATION	(IN.)	.069	.075	0.000	.508
NONDIM. DEPTH STD.DEV.	( )	.263	.147	0.000	.493
A OF TRI. HYETOGRAPH	(MIN)	19.701	20.776	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	40.299	20.776	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.328	.346	0.000	1.000

***** NUMBER OF RAINSTORMS = 416 *****

TABLE 21B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .146 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.350	.207	.150	1.120
INTENSITY	(IN./HR)	.350	.207	.150	1.120
FIRST TIME MOMENT	(HR)	.422	.140	.253	.730
SECOND TIME MOMENT	(HR*HR)	.256	.140	.087	.563
TIME STANDARD DEVIATION	(HR)	.236	.043	.150	.289
NONDIM. TIME STD.DEV.	( )	.236	.043	.150	.289
NONDIM. 2ND TIME MOMENT	( )	.256	.140	.087	.563
NONDIM. 1ST TIME MOMENT	( )	.422	.140	.253	.730
DEPTH STANDARD DEVIATION	(IN.)	.101	.084	0.000	.508
NONDIM. DEPTH STD.DEV.	( )	.283	.150	0.000	.493
A OF TRI. HYETOGRAPH	(MIN)	18.867	21.400	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	41.133	21.400	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.314	.357	0.000	1.000

***** NUMBER OF RAINSTORMS = 244 *****

TABLE 21C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =60.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .292 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	60.000	0.000	60.000	60.000
DEPTH	(IN.)	.497	.200	.300	1.120
INTENSITY	(IN./HR)	.497	.200	.300	1.120
FIRST TIME MOMENT	(HR)	.414	.135	.253	.729
SECOND TIME MOMENT	(HR*HR)	.247	.135	.087	.562
TIME STANDARD DEVIATION	(HR)	.236	.044	.150	.289
NONDIM. TIME STD.DEV.	( )	.236	.044	.150	.289
NONDIM. 2ND TIME MOMENT	( )	.247	.135	.087	.562
NONDIM. 1ST TIME MOMENT	( )	.414	.135	.253	.729
DEPTH STANDARD DEVIATION	(IN.)	.143	.097	0.000	.508
NONDIM. DEPTH STD.DEV.	( )	.284	.148	0.000	.493
A OF TRI. HYETOGRAPH	(MIN)	17.507	20.760	0.000	60.000
B OF TRI. HYETOGRAPH	(MIN)	42.493	20.760	0.000	60.000
A OF NONDIM. HYETOGRAPH	( )	.292	.346	0.000	1.000

***** NUMBER OF RAINSTORMS = 122 *****

TABLE 22A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =90.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .104 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	90.000	0.000	90.000	90.000
DEPTH	(IN.)	.338	.255	.110	1.650
INTENSITY	(IN./HR)	.225	.170	.073	1.100
FIRST TIME MOMENT	(HR)	.645	.205	.263	1.195
SECOND TIME MOMENT	(HR*HR)	.573	.285	.099	1.479
TIME STANDARD DEVIATION	(HR)	.332	.071	.172	.508
NONDIM. TIME STD.DEV.	( )	.221	.048	.115	.338
NONDIM. 2ND TIME MOMENT	( )	.255	.127	.044	.657
NONDIM. 1ST TIME MOMENT	( )	.430	.136	.175	.797
DEPTH STANDARD DEVIATION	(IN.)	.090	.086	.004	.511
NONDIM. DEPTH STD.DEV.	( )	.246	.102	.021	.459
A OF TRI. HYETOGRAPH	(MIN)	30.779	28.369	0.000	90.000
B OF TRI. HYETOGRAPH	(MIN)	59.221	28.369	0.000	90.000
A OF NONDIM. HYETOGRAPH	( )	.342	.315	0.000	1.000

***** NUMBER OF RAINSTORMS = 251 *****

TABLE 22B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =90.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .208 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	90.000	0.000	90.000	90.000
DEPTH	(IN.)	.486	.259	.210	1.650
INTENSITY	(IN./HR)	.324	.173	.140	1.100
FIRST TIME MOMENT	(HR)	.612	.209	.263	1.195
SECOND TIME MOMENT	(HR*HR)	.525	.287	.099	1.479
TIME STANDARD DEVIATION	(HR)	.319	.074	.172	.508
NONDIM. TIME STD.DEV.	( )	.213	.049	.115	.338
NONDIM. 2ND TIME MOMENT	( )	.233	.127	.044	.657
NONDIM. 1ST TIME MOMENT	( )	.408	.139	.175	.797
DEPTH STANDARD DEVIATION	(IN.)	.135	.093	.005	.511
NONDIM. DEPTH STD.DEV.	( )	.269	.099	.021	.459
A OF TRI. HYETOGRAPH	(MIN)	26.441	28.607	0.000	90.000
B OF TRI. HYETOGRAPH	(MIN)	63.559	28.607	0.000	90.000
A OF NONDIM. HYETOGRAPH	( )	.294	.318	0.000	1.000

***** NUMBER OF RAINSTORMS = 139 *****

TABLE 22C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =90.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .415 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	90.000	0.000	90.000	90.000
DEPTH	(IN.)	.653	.253	.420	1.650
INTENSITY	(IN./HR)	.435	.169	.280	1.100
FIRST TIME MOMENT	(HR)	.599	.197	.263	1.049
SECOND TIME MOMENT	(HR*HR)	.492	.258	.100	1.195
TIME STANDARD DEVIATION	(HR)	.300	.069	.177	.486
NONDIM. TIME STD.DEV.	( )	.200	.046	.118	.324
NONDIM. 2ND TIME MOMENT	( )	.218	.115	.045	.531
NONDIM. 1ST TIME MOMENT	( )	.399	.131	.175	.699
DEPTH STANDARD DEVIATION	(IN.)	.189	.094	.049	.511
NONDIM. DEPTH STD.DEV.	( )	.291	.091	.058	.459
A OF TRI. HYETOGRAPH	(MIN)	24.947	26.647	0.000	90.000
B OF TRI. HYETOGRAPH	(MIN)	65.053	26.647	0.000	90.000
A OF NONDIM. HYETOGRAPH	( )	.277	.296	0.000	1.000

***** NUMBER OF RAINSTORMS = 74 *****

TABLE 23A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .133 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.383	.289	.140	2.000
INTENSITY	(IN./HR)	.191	.145	.070	1.000
FIRST TIME MOMENT	(HR)	.847	.259	.275	1.519
SECOND TIME MOMENT	(HR*HR)	1.004	.474	.117	2.525
TIME STANDARD DEVIATION	(HR)	.459	.096	.202	.705
NONDIM. TIME STD.DEV.	( )	.230	.048	.101	.353
NONDIM. 2ND TIME MOMENT	( )	.251	.118	.029	.631
NONDIM. 1ST TIME MOMENT	( )	.423	.130	.138	.760
DEPTH STANDARD DEVIATION	(IN.)	.080	.073	.008	.476
NONDIM. DEPTH STD.DEV.	( )	.196	.077	.048	.414
A OF TRI. HYETOGRAPH	(MIN)	39.168	35.687	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	80.832	35.687	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.326	.297	0.000	1.000

***** NUMBER OF RAINSTORMS = 200 *****

TABLE 23B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .267 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.536	.309	.270	2.000
INTENSITY	(IN./HR)	.268	.154	.135	1.000
FIRST TIME MOMENT	(HR)	.796	.270	.275	1.511
SECOND TIME MOMENT	(HR*HR)	.899	.471	.117	2.447
TIME STANDARD DEVIATION	(HR)	.429	.094	.202	.705
NONDIM. TIME STD.DEV.	( )	.215	.047	.101	.353
NONDIM. 2ND TIME MOMENT	( )	.225	.118	.029	.612
NONDIM. 1ST TIME MOMENT	( )	.398	.135	.138	.756
DEPTH STANDARD DEVIATION	(IN.)	.117	.078	.018	.476
NONDIM. DEPTH STD.DEV.	( )	.219	.075	.052	.414
A OF TRI. HYETOGRAPH	(MIN)	33.619	34.361	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	86.381	34.361	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.280	.286	0.000	1.000

***** NUMBER OF RAINSTORMS = 112 *****

TABLE 23C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .534 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.856	.327	.540	2.000
INTENSITY	(IN./HR)	.428	.163	.270	1.000
FIRST TIME MOMENT	(HR)	.801	.256	.278	1.429
SECOND TIME MOMENT	(HR*HR)	.883	.451	.127	2.171
TIME STANDARD DEVIATION	(HR)	.412	.097	.222	.692
NONDIM. TIME STD.DEV.	( )	.206	.048	.111	.346
NONDIM. 2ND TIME MOMENT	( )	.221	.113	.032	.543
NONDIM. 1ST TIME MOMENT	( )	.400	.128	.139	.714
DEPTH STANDARD DEVIATION	(IN.)	.186	.090	.044	.476
NONDIM. DEPTH STD.DEV.	( )	.219	.070	.080	.414
A OF TRI. HYETOGRAPH	(MIN)	32.217	34.963	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	87.783	34.963	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.268	.291	0.000	1.000

***** NUMBER OF RAINSTORMS = 39 *****

TABLE 24A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .183 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	.507	.468	.190	3.440
INTENSITY	(IN./HR)	.169	.156	.063	1.147
FIRST TIME MOMENT	(HR)	1.182	.398	.365	2.623
SECOND TIME MOMENT	(HR*HR)	1.989	1.083	.342	7.134
TIME STANDARD DEVIATION	(HR)	.646	.131	.335	1.049
NONDIM. TIME STD.DEV.	( )	.215	.044	.112	.350
NONDIM. 2ND TIME MOMENT	( )	.221	.120	.038	.793
NONDIM. 1ST TIME MOMENT	( )	.394	.133	.122	.874
DEPTH STANDARD DEVIATION	(IN.)	.086	.109	.009	.864
NONDIM. DEPTH STD.DEV.	( )	.153	.068	.043	.345
A OF TRI. HYETOGRAPH	(MIN)	45.887	50.151	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	134.113	50.151	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.255	.279	0.000	1.000

***** NUMBER OF RAINSTORMS = 92 *****

TABLE 24B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .366 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	.766	.562	.370	3.440
INTENSITY	(IN./HR)	.255	.187	.123	1.147
FIRST TIME MOMENT	(HR)	1.157	.451	.365	2.623
SECOND TIME MOMENT	(HR*HR)	1.949	1.299	.342	7.134
TIME STANDARD DEVIATION	(HR)	.624	.147	.335	1.049
NONDIM. TIME STD.DEV.	( )	.208	.049	.112	.350
NONDIM. 2ND TIME MOMENT	( )	.217	.144	.038	.793
NONDIM. 1ST TIME MOMENT	( )	.386	.150	.122	.874
DEPTH STANDARD DEVIATION	(IN.)	.139	.137	.025	.864
NONDIM. DEPTH STD.DEV.	( )	.173	.070	.055	.345
A OF TRI. HYETOGRAPH	(MIN)	43.421	56.324	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	136.579	56.324	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.241	.313	0.000	1.000

***** NUMBER OF RAINSTORMS = 45 *****

TABLE 24C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .732 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	1.394	.729	.750	3.440
INTENSITY	(IN./HR)	.465	.243	.250	1.147
FIRST TIME MOMENT	(HR)	1.080	.400	.553	1.968
SECOND TIME MOMENT	(HR*HR)	1.679	1.088	.588	4.272
TIME STANDARD DEVIATION	(HR)	.591	.135	.351	.917
NONDIM. TIME STD.DEV.	( )	.197	.045	.117	.306
NONDIM. 2ND TIME MOMENT	( )	.187	.121	.065	.475
NONDIM. 1ST TIME MOMENT	( )	.360	.133	.184	.656
DEPTH STANDARD DEVIATION	(IN.)	.268	.195	.115	.864
NONDIM. DEPTH STD.DEV.	( )	.189	.056	.112	.313
A OF TRI. HYETOGRAPH	(MIN)	33.887	55.492	0.000	174.214
B OF TRI. HYETOGRAPH	(MIN)	146.113	55.492	5.786	180.000
A OF NONDIM. HYETOGRAPH	( )	.188	.308	0.000	.968

***** NUMBER OF RAINSTORMS = 13 *****

TABLE 25A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .159 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.369	.214	.160	1.220
INTENSITY	(IN./HR)	.092	.054	.040	.305
FIRST TIME MOMENT	(HR)	1.810	.496	.744	3.285
SECOND TIME MOMENT	(HR*HR)	4.557	1.908	1.084	11.122
TIME STANDARD DEVIATION	(HR)	.995	.219	.574	1.545
NONDIM. TIME STD.DEV.	( )	.249	.055	.144	.386
NONDIM. 2ND TIME MOMENT	( )	.285	.119	.068	.695
NONDIM. 1ST TIME MOMENT	( )	.453	.124	.186	.821
DEPTH STANDARD DEVIATION	(IN.)	.043	.039	.005	.153
NONDIM. DEPTH STD.DEV.	( )	.107	.051	.024	.228
A OF TRI. HYETOGRAPH	(MIN)	92.182	70.002	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	147.818	70.002	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.384	.292	0.000	1.000

***** NUMBER OF RAINSTORMS = 65 *****

TABLE 25B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .319 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.553	.211	.330	1.220
INTENSITY	(IN./HR)	.138	.053	.082	.305
FIRST TIME MOMENT	(HR)	1.776	.612	.744	3.285
SECOND TIME MOMENT	(HR*HR)	4.472	2.344	1.297	11.122
TIME STANDARD DEVIATION	(HR)	.949	.242	.574	1.545
NONDIM. TIME STD.DEV.	( )	.237	.060	.144	.386
NONDIM. 2ND TIME MOMENT	( )	.280	.147	.081	.695
NONDIM. 1ST TIME MOMENT	( )	.444	.153	.186	.821
DEPTH STANDARD DEVIATION	(IN.)	.073	.042	.023	.153
NONDIM. DEPTH STD.DEV.	( )	.128	.050	.050	.216
A OF TRI. HYETOGRAPH	(MIN)	87.870	82.902	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	152.130	82.902	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.366	.345	0.000	1.000

***** NUMBER OF RAINSTORMS = 28 *****

TABLE 25C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .637 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.828	.189	.690	1.220
INTENSITY	(IN./HR)	.207	.047	.173	.305
FIRST TIME MOMENT	(HR)	1.663	.616	.744	2.514
SECOND TIME MOMENT	(HR*HR)	3.990	2.293	1.297	6.864
TIME STANDARD DEVIATION	(HR)	.891	.333	.634	1.545
NONDIM. TIME STD.DEV.	( )	.223	.083	.158	.386
NONDIM. 2ND TIME MOMENT	( )	.249	.143	.081	.429
NONDIM. 1ST TIME MOMENT	( )	.416	.154	.186	.628
DEPTH STANDARD DEVIATION	(IN.)	.119	.040	.038	.153
NONDIM. DEPTH STD.DEV.	( )	.146	.053	.050	.212
A OF TRI. HYETOGRAPH	(MIN)	81.375	80.408	0.000	212.477
B OF TRI. HYETOGRAPH	(MIN)	158.625	80.408	27.523	240.000
A OF NONDIM. HYETOGRAPH	( )	.339	.335	0.000	.885

***** NUMBER OF RAINSTORMS = 8 *****

TABLE 26A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .222 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.605	.375	.230	1.740
INTENSITY	(IN./HR)	.121	.075	.046	.348
FIRST TIME MOMENT	(HR)	2.294	.661	.886	3.952
SECOND TIME MOMENT	(HR*HR)	7.218	3.214	1.190	16.503
TIME STANDARD DEVIATION	(HR)	1.220	.215	.636	1.519
NONDIM. TIME STD.DEV.	( )	.244	.043	.127	.304
NONDIM. 2ND TIME MOMENT	( )	.289	.129	.048	.660
NONDIM. 1ST TIME MOMENT	( )	.459	.132	.177	.790
DEPTH STANDARD DEVIATION	(IN.)	.055	.051	.002	.230
NONDIM. DEPTH STD.DEV.	( )	.085	.050	.008	.232
A OF TRI. HYETOGRAPH	(MIN)	120.975	92.369	0.000	300.000
B OF TRI. HYETOGRAPH	(MIN)	179.025	92.369	0.000	300.000
A OF NONDIM. HYETOGRAPH	( )	.403	.308	0.000	1.000

***** NUMBER OF RAINSTORMS = 32 *****

TABLE 26B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .443 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.852	.364	.450	1.740
INTENSITY	(IN./HR)	.170	.073	.090	.348
FIRST TIME MOMENT	(HR)	2.054	.630	.886	3.162
SECOND TIME MOMENT	(HR*HR)	6.060	2.883	1.190	11.427
TIME STANDARD DEVIATION	(HR)	1.193	.217	.636	1.516
NONDIM. TIME STD.DEV.	( )	.239	.043	.127	.303
NONDIM. 2ND TIME MOMENT	( )	.242	.115	.048	.457
NONDIM. 1ST TIME MOMENT	( )	.411	.126	.177	.632
DEPTH STANDARD DEVIATION	(IN.)	.083	.056	.023	.230
NONDIM. DEPTH STD.DEV.	( )	.097	.050	.043	.232
A OF TRI. HYETOGRAPH	(MIN)	86.793	90.800	0.000	269.126
B OF TRI. HYETOGRAPH	(MIN)	213.207	90.800	30.874	300.000
A OF NONDIM. HYETOGRAPH	( )	.289	.303	0.000	.897

***** NUMBER OF RAINSTORMS = 17 *****

TABLE 26C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 30 MIN (1937-78)
RAINFALL DEPTH RANGE .887 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	1.310	.336	.920	1.740
INTENSITY	(IN./HR)	.262	.067	.184	.348
FIRST TIME MOMENT	(HR)	2.101	.732	1.291	3.162
SECOND TIME MOMENT	(HR*HR)	6.286	3.128	3.047	10.863
TIME STANDARD DEVIATION	(HR)	1.191	.179	.931	1.377
NONDIM. TIME STD.DEV.	( )	.238	.036	.186	.275
NONDIM. 2ND TIME MOMENT	( )	.251	.125	.122	.435
NONDIM. 1ST TIME MOMENT	( )	.420	.146	.258	.632
DEPTH STANDARD DEVIATION	(IN.)	.127	.076	.040	.230
NONDIM. DEPTH STD.DEV.	( )	.090	.037	.043	.132
A OF TRI. HYETOGRAPH	(MIN)	96.015	110.378	0.000	269.126
B OF TRI. HYETOGRAPH	(MIN)	203.985	110.378	30.874	300.000
A OF NONDIM. HYETOGRAPH	( )	.320	.368	0.000	.897

***** NUMBER OF RAINSTORMS = 5 *****

TABLE 27A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .104 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.335	.244	.110	1.650
INTENSITY	(IN./HR)	.168	.122	.055	.825
FIRST TIME MOMENT	(HR)	.879	.291	.506	1.488
SECOND TIME MOMENT	(HR*HR)	1.092	.583	.344	2.310
TIME STANDARD DEVIATION	(HR)	.477	.083	.298	.577
NONDIM. TIME STD.DEV.	( )	.238	.042	.149	.289
NONDIM. 2ND TIME MOMENT	( )	.273	.146	.086	.578
NONDIM. 1ST TIME MOMENT	( )	.440	.146	.253	.744
DEPTH STANDARD DEVIATION	(IN.)	.101	.104	0.000	.798
NONDIM. DEPTH STD.DEV.	( )	.280	.144	0.000	.494
A OF TRI. HYETOGRAPH	(MIN)	41.629	44.438	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	78.371	44.438	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.347	.370	0.000	1.000

***** NUMBER OF RAINSTORMS = 401 *****

TABLE 27B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .209 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.465	.243	.210	1.650
INTENSITY	(IN./HR)	.233	.122	.105	.825
FIRST TIME MOMENT	(HR)	.863	.303	.506	1.488
SECOND TIME MOMENT	(HR*HR)	1.060	.606	.344	2.310
TIME STANDARD DEVIATION	(HR)	.464	.087	.298	.577
NONDIM. TIME STD.DEV.	( )	.232	.044	.149	.289
NONDIM. 2ND TIME MOMENT	( )	.265	.152	.086	.578
NONDIM. 1ST TIME MOMENT	( )	.432	.152	.253	.744
DEPTH STANDARD DEVIATION	(IN.)	.144	.115	.000	.798
NONDIM. DEPTH STD.DEV.	( )	.298	.147	.000	.494
A OF TRI. HYETOGRAPH	(MIN)	39.690	45.263	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	80.310	45.263	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.331	.377	0.000	1.000

***** NUMBER OF RAINSTORMS = 236 *****

TABLE 27C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =120.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .418 IN.=(MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	120.000	0.000	120.000	120.000
DEPTH	(IN.)	.659	.237	.420	1.650
INTENSITY	(IN./HR)	.329	.119	.210	.825
FIRST TIME MOMENT	(HR)	.859	.333	.506	1.485
SECOND TIME MOMENT	(HR*HR)	1.051	.667	.344	2.304
TIME STANDARD DEVIATION	(HR)	.441	.092	.298	.577
NONDIM. TIME STD.DEV.	( )	.221	.046	.149	.289
NONDIM. 2ND TIME MOMENT	( )	.263	.167	.086	.576
NONDIM. 1ST TIME MOMENT	( )	.429	.167	.253	.743
DEPTH STANDARD DEVIATION	(IN.)	.217	.129	.000	.798
NONDIM. DEPTH STD.DEV.	( )	.329	.149	.000	.494
A OF TRI. HYETOGRAPH	(MIN)	40.249	48.189	0.000	120.000
B OF TRI. HYETOGRAPH	(MIN)	79.751	48.189	0.000	120.000
A OF NONDIM. HYETOGRAPH	( )	.335	.402	0.000	1.000

***** NUMBER OF RAINSTORMS = 108 *****

TABLE 28A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .168 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	.505	.392	.170	3.440
INTENSITY	(IN./HR)	.168	.131	.057	1.147
FIRST TIME MOMENT	(HR)	1.228	.388	.516	2.288
SECOND TIME MOMENT	(HR*HR)	2.121	1.067	.367	5.667
TIME STANDARD DEVIATION	(HR)	.666	.140	.316	1.024
NONDIM. TIME STD.DEV.	( )	.222	.047	.105	.341
NONDIM. 2ND TIME MOMENT	( )	.236	.119	.041	.630
NONDIM. 1ST TIME MOMENT	( )	.409	.129	.172	.763
DEPTH STANDARD DEVIATION	(IN.)	.132	.137	.003	1.468
NONDIM. DEPTH STD.DEV.	( )	.248	.097	.014	.460
A OF TRI. HYETOGRAPH	(MIN)	52.334	52.663	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	127.666	52.663	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.291	.293	0.000	1.000

***** NUMBER OF RAINSTORMS = 239 *****

TABLE 28B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .335 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	.706	.425	.340	3.440
INTENSITY	(IN./HR)	.235	.142	.113	1.147
FIRST TIME MOMENT	(HR)	1.173	.393	.516	2.288
SECOND TIME MOMENT	(HR*HR)	1.959	1.068	.367	5.667
TIME STANDARD DEVIATION	(HR)	.641	.138	.316	.995
NONDIM. TIME STD.DEV.	( )	.214	.046	.105	.332
NONDIM. 2ND TIME MOMENT	( )	.218	.119	.041	.630
NONDIM. 1ST TIME MOMENT	( )	.391	.131	.172	.763
DEPTH STANDARD DEVIATION	(IN.)	.189	.160	.012	1.468
NONDIM. DEPTH STD.DEV.	( )	.259	.097	.034	.460
A OF TRI. HYETOGRAPH	(MIN)	45.549	51.538	0.000	180.000
B OF TRI. HYETOGRAPH	(MIN)	134.451	51.538	0.000	180.000
A OF NONDIM. HYETOGRAPH	( )	.253	.286	0.000	1.000

***** NUMBER OF RAINSTORMS = 134 *****

TABLE 28C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =180.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .671 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	180.000	0.000	180.000	180.000
DEPTH	(IN.)	1.065	.513	.680	3.440
INTENSITY	(IN./HR)	.355	.171	.227	1.147
FIRST TIME MOMENT	(HR)	1.133	.397	.540	1.898
SECOND TIME MOMENT	(HR*HR)	1.844	1.015	.420	3.987
TIME STANDARD DEVIATION	(HR)	.622	.144	.320	.967
NONDIM. TIME STD.DEV.	( )	.207	.048	.107	.322
NONDIM. 2ND TIME MOMENT	( )	.205	.113	.047	.443
NONDIM. 1ST TIME MOMENT	( )	.378	.132	.180	.633
DEPTH STANDARD DEVIATION	(IN.)	.297	.212	.032	1.468
NONDIM. DEPTH STD.DEV.	( )	.274	.095	.044	.458
A OF TRI. HYETOGRAPH	(MIN)	42.998	51.584	0.000	161.692
B OF TRI. HYETOGRAPH	(MIN)	137.002	51.584	18.308	180.000
A OF NONDIM. HYETOGRAPH	( )	.239	.287	0.000	.898

***** NUMBER OF RAINSTORMS = 50 *****

TABLE 29A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .182 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.525	.399	.190	2.410
INTENSITY	(IN./HR)	.131	.100	.048	.603
FIRST TIME MOMENT	(HR)	1.717	.580	.562	3.355
SECOND TIME MOMENT	(HR*HR)	4.152	2.198	.529	11.640
TIME STANDARD DEVIATION	(HR)	.910	.208	.461	1.459
NONDIM. TIME STD.DEV.	( )	.227	.052	.115	.365
NONDIM. 2ND TIME MOMENT	( )	.259	.137	.033	.728
NONDIM. 1ST TIME MOMENT	( )	.429	.145	.141	.839
DEPTH STANDARD DEVIATION	(IN.)	.120	.126	.012	.781
NONDIM. DEPTH STD.DEV.	( )	.206	.084	.043	.414
A OF TRI. HYETOGRAPH	(MIN)	81.757	77.127	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	158.243	77.127	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.341	.321	0.000	1.000

***** NUMBER OF RAINSTORMS = 140 *****

TABLE 29B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .364 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	.763	.445	.370	2.410
INTENSITY	(IN./HR)	.191	.111	.093	.603
FIRST TIME MOMENT	(HR)	1.640	.632	.562	3.355
SECOND TIME MOMENT	(HR*HR)	3.884	2.333	.529	11.640
TIME STANDARD DEVIATION	(HR)	.866	.224	.461	1.459
NONDIM. TIME STD.DEV.	( )	.216	.056	.115	.365
NONDIM. 2ND TIME MOMENT	( )	.243	.146	.033	.728
NONDIM. 1ST TIME MOMENT	( )	.410	.158	.141	.839
DEPTH STANDARD DEVIATION	(IN.)	.187	.148	.036	.781
NONDIM. DEPTH STD.DEV.	( )	.229	.084	.087	.414
A OF TRI. HYETOGRAPH	(MIN)	75.172	79.754	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	164.828	79.754	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.313	.332	0.000	1.000

***** NUMBER OF RAINSTORMS = 71 *****

TABLE 29C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =240.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .728 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	240.000	0.000	240.000	240.000
DEPTH	(IN.)	1.229	.424	.790	2.410
INTENSITY	(IN./HR)	.307	.106	.198	.603
FIRST TIME MOMENT	(HR)	1.563	.669	.562	2.917
SECOND TIME MOMENT	(HR*HR)	3.523	2.347	.529	9.133
TIME STANDARD DEVIATION	(HR)	.776	.225	.461	1.379
NONDIM. TIME STD.DEV.	( )	.194	.056	.115	.345
NONDIM. 2ND TIME MOMENT	( )	.220	.147	.033	.571
NONDIM. 1ST TIME MOMENT	( )	.391	.167	.141	.729
DEPTH STANDARD DEVIATION	(IN.)	.326	.157	.093	.781
NONDIM. DEPTH STD.DEV.	( )	.262	.082	.118	.414
A OF TRI. HYETOGRAPH	(MIN)	69.826	80.007	0.000	240.000
B OF TRI. HYETOGRAPH	(MIN)	170.174	80.007	0.000	240.000
A OF NONDIM. HYETOGRAPH	( )	.291	.333	0.000	1.000

***** NUMBER OF RAINSTORMS = 26 *****

TABLE 30A. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .220 IN. (MEAN*0.5) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.558	.399	.220	2.450
INTENSITY	(IN./HR)	.112	.080	.044	.490
FIRST TIME MOMENT	(HR)	2.220	.648	.593	4.098
SECOND TIME MOMENT	(HR*HR)	6.725	3.063	.602	17.785
TIME STANDARD DEVIATION	(HR)	1.150	.238	.500	1.755
NONDIM. TIME STD.DEV.	( )	.230	.048	.100	.351
NONDIM. 2ND TIME MOMENT	( )	.269	.123	.024	.711
NONDIM. 1ST TIME MOMENT	( )	.444	.130	.119	.820
DEPTH STANDARD DEVIATION	(IN.)	.095	.099	.009	.611
NONDIM. DEPTH STD.DEV.	( )	.159	.065	.037	.367
A OF TRI. HYETOGRAPH	(MIN)	109.617	92.065	0.000	300.000
B OF TRI. HYETOGRAPH	(MIN)	190.383	92.065	0.000	300.000
A OF NONDIM. HYETOGRAPH	( )	.365	.307	0.000	1.000

***** NUMBER OF RAINSTORMS = 113 *****

TABLE 30B. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .440 IN. (MEAN) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	.853	.424	.440	2.450
INTENSITY	(IN./HR)	.171	.085	.088	.490
FIRST TIME MOMENT	(HR)	2.103	.735	.593	3.707
SECOND TIME MOMENT	(HR*HR)	6.310	3.353	.602	15.199
TIME STANDARD DEVIATION	(HR)	1.138	.251	.500	1.755
NONDIM. TIME STD.DEV.	( )	.228	.050	.100	.351
NONDIM. 2ND TIME MOMENT	( )	.252	.134	.024	.608
NONDIM. 1ST TIME MOMENT	( )	.421	.147	.119	.741
DEPTH STANDARD DEVIATION	(IN.)	.153	.122	.022	.611
NONDIM. DEPTH STD.DEV.	( )	.169	.072	.040	.367
A OF TRI. HYETOGRAPH	(MIN)	97.811	98.600	0.000	300.000
B OF TRI. HYETOGRAPH	(MIN)	202.189	98.600	0.000	300.000
A OF NONDIM. HYETOGRAPH	( )	.326	.329	0.000	1.000

***** NUMBER OF RAINSTORMS = 52 *****

TABLE 30C. APR-OCT RAINSTORMS FROM ARS PRECIPITATION DATA AT STATION COSHOCTON, OH
DURATION =300.0 MIN DATA TIME INTERVAL = 60 MIN (1937-78)
RAINFALL DEPTH RANGE .879 IN. (MEAN*2.0) <= DEPTH <****** IN.

PARAMETER	UNIT	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
DURATION	(MIN)	300.000	0.000	300.000	300.000
DEPTH	(IN.)	1.288	.371	.900	2.450
INTENSITY	(IN./HR)	.258	.074	.180	.490
FIRST TIME MOMENT	(HR)	1.942	.794	.593	3.257
SECOND TIME MOMENT	(HR*HR)	5.602	3.462	.602	12.389
TIME STANDARD DEVIATION	(HR)	1.083	.251	.500	1.564
NONDIM. TIME STD.DEV.	( )	.217	.050	.100	.313
NONDIM. 2ND TIME MOMENT	( )	.224	.138	.024	.496
NONDIM. 1ST TIME MOMENT	( )	.388	.159	.119	.651
DEPTH STANDARD DEVIATION	(IN.)	.253	.140	.049	.611
NONDIM. DEPTH STD.DEV.	( )	.193	.082	.049	.367
A OF TRI. HYETOGRAPH	(MIN)	85.878	104.087	0.000	286.263
B OF TRI. HYETOGRAPH	(MIN)	214.122	104.087	13.737	300.000
A OF NONDIM. HYETOGRAPH	( )	.286	.347	0.000	.954

***** NUMBER OF RAINSTORMS = 20 *****

FEDERALLY COORDINATED PROGRAM (FCP) OF HIGHWAY RESEARCH AND DEVELOPMENT

The Offices of Research and Development (R&D) of the Federal Highway Administration (FHWA) are responsible for a broad program of staff and contract research and development and a Federal-aid program, conducted by or through the State highway transportation agencies, that includes the Highway Planning and Research (HP&R) program and the National Cooperative Highway Research Program (NCHRP) managed by the Transportation Research Board. The FCP is a carefully selected group of projects that uses research and development resources to obtain timely solutions to urgent national highway engineering problems.*

The diagonal double stripe on the cover of this report represents a highway and is color-coded to identify the FCP category that the report falls under. A red stripe is used for category 1, dark blue for category 2, light blue for category 3, brown for category 4, gray for category 5, green for categories 6 and 7, and an orange stripe identifies category 0.

FCP Category Descriptions

1. Improved Highway Design and Operation for Safety

Safety R&D addresses problems associated with the responsibilities of the FHWA under the Highway Safety Act and includes investigation of appropriate design standards, roadside hardware, signing, and physical and scientific data for the formulation of improved safety regulations.

2. Reduction of Traffic Congestion, and Improved Operational Efficiency

Traffic R&D is concerned with increasing the operational efficiency of existing highways by advancing technology, by improving designs for existing as well as new facilities, and by balancing the demand-capacity relationship through traffic management techniques such as bus and carpool preferential treatment, motorist information, and rerouting of traffic.

3. Environmental Considerations in Highway Design, Location, Construction, and Operation

Environmental R&D is directed toward identifying and evaluating highway elements that affect the quality of the human environment. The goals are reduction of adverse highway and traffic impacts, and protection and enhancement of the environment.

4. Improved Materials Utilization and Durability

Materials R&D is concerned with expanding the knowledge and technology of materials properties, using available natural materials, improving structural foundation materials, recycling highway materials, converting industrial wastes into useful highway products, developing extender or substitute materials for those in short supply, and developing more rapid and reliable testing procedures. The goals are lower highway construction costs and extended maintenance-free operation.

5. Improved Design to Reduce Costs, Extend Life Expectancy, and Insure Structural Safety

Structural R&D is concerned with furthering the latest technological advances in structural and hydraulic designs, fabrication processes, and construction techniques to provide safe, efficient highways at reasonable costs.

6. Improved Technology for Highway Construction

This category is concerned with the research, development, and implementation of highway construction technology to increase productivity, reduce energy consumption, conserve dwindling resources, and reduce costs while improving the quality and methods of construction.

7. Improved Technology for Highway Maintenance

This category addresses problems in preserving the Nation's highways and includes activities in physical maintenance, traffic services, management, and equipment. The goal is to maximize operational efficiency and safety to the traveling public while conserving resources.

0. Other New Studies

This category, not included in the seven-volume official statement of the FCP, is concerned with HP&R and NCHRP studies not specifically related to FCP projects. These studies involve R&D support of other FHWA program office research.

* The complete seven-volume official statement of the FCP is available from the National Technical Information Service, Springfield, Va. 22161. Single copies of the introductory volume are available without charge from Program Analysis (HRD-3), Offices of Research and Development, Federal Highway Administration, Washington, D.C. 20590.