METEOROLOGICAL DATA

FOR

ISLAMABAD

THE CAPITAL CITY

OF

THE ISLAMIC REPUBLIC OF PAKISTAN.

January, 2003

Source of Data:

Pakistan Meteorological Department , Islamabad.
(National Agro Met Center)

Monthly Rainfall (mm) Data of Islamabad for the period of 1991-2001

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
1991	9.2	107.0	104.0	116.6	16.8	88.6	251.8	264.2	212.0	3.3	3.8	17.1	1193.6
1992	99.2	91.3	119.0	30.5	36.8	14.5	256.7	305.0	258.0	9.0	34.0	7.9	1261.9
1993	36.4	30.0	141.0	22.0	44.7	77.8	152.7	211.2	93.5	6.0	15.4	Trace	830.3
1994	36.1	51.4	36.0	69.3	36.0	54.8	596.7	637.7	56.2	29.8	1.0	93.2	1698.2
1995	31.5	99.8	104.0	107.4	17.2	20.5	743.3	331.8	39.8	64.6	20.0	35.0	1615.2
1996	80.5	136.0	143.0	36.3	43.4	138.3	199.9	411.7	118.0	57.8	3.4	7.6	1376.1
1997	39.0	20.3	84.3	172.2	46.1	64.7	194.8	496.4	158.0	95.8	22.4	19.8	1413.8
1998	36.7	249.0	75.8	110.0	29.6	27.3	306.0	428.4	138.0	11.0	0.0	Trace	1411.6
1999	83.1	35.5	80.8	2.0	22.1	33.0	232.3	334.0	145.0	9.5	35.0	0.0	1012.3
2000	129.0	70.6	18.0	2.5	11.0	37.0	207.0	381.0	129.0	0.0	Trace	14.0	999.1
2001	0.0	0.2	31.3	15.4	37.8	118.2	1026.0	192.2	17.0	18.5	3.1	1.0	1460.7

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Name of place	Deaths	Houses destroyed		Loss of live
		Completely	Partially	
Rawalpindi	51	601	1378	Over 1000 buffaloes besides numerous domestic animals
Islamabad	10	800	1069	---
Bunair	30	49	---	---
Dadar	104 plus 12 missing & 72 injured	69	44	---

The loss of life and property resulting from the this disaster/flood is the worst in any metropolitan city of the country. Pindiwalls(inhabitants of the city) will never forget the death-dealing 23rd July,2001 disaster/flood.

Meteorological Statistics:

This area which situates in the foot of Margala hills, has been singularly blessed by not having had, what is termed, a major disaster in the previous history. Meteorological record depicts that such a heavy downpour was not recorded during last 80 years. Previously, on august 27, 1997 320 mm of rain was recorded in Islamabad. It was the ever highest downpour in the area in a single day. On month basis, 4th July 1994 was the wettest day when 174 mm of rain was recorded in Islamabad.

On July 23, the heaviest rains ever recorded in Islamabad. Detail of recorded rainfall from the gauges of Pakistan Meteorological Department installed in the vicinity of twin-cities is as under.

Station Name	0800PST	1100PST	1400PST	1700PST	Total rain of the event.
Islamabad	42	132	400	46	620
Chaklala	Tr	06	65	99	170
Rawalpindi	04	83	200	48	335
Daman-e-Koh	103	-	-	314	417

Total Monthly Rainfall(mm) Data of Islamabad
(1961 - 1990)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
1961	145	43.4	21.1	124.7	12.7	25.7	246.6	154.7	279.1	39.1	43.7	8.6	1144.4
1962	13.7	51.3	68.6	25.9	23.9	52.3	201.2	421.6	78	5.1	26.7	82	1050.3
1963	0	42.9	73.9	57.4	51.6	8.9	220.5	336.3	92.5	0	47.2	44.2	975.4
1964	143.3	13.7	20.6	43.9	45.7	24.6	263.7	91.9	47	0	1.8	12.4	708.6
1965	38.6	92.7	90.9	210.1	115.3	20.6	111	119.1	13.5	10.9	25.7	10.7	859.1
1966	0	165.4	80.3	47.8	61	101.9	164.1	187.7	87.6	39.1	0	14	948.9
1967	0	66.5	134.9	38.9	23.1	18.5	261.6	342.4	56.9	19.8	3.6	152.4	1118.6
1968	69.3	81.5	64.5	36.6	49.8	14.2	249.4	401.3	20.8	36.8	45.7	44.5	1114.4
1969	2.8	62.7	54.4	35.3	55.9	15	84.6	274.3	50.3	95.8	6.3	0	737.4
1970	72.4	83.6	78.5	11.9	16.3	37.8	189	325.1	172	24.9	1	7.9	1020.4
1971	21.6	56.6	11.2	79	26.9	239	169.9	389.6	75.7	1.3	12.2	8.1	1091.1
1972	72.6	48.3	108.2	67.8	19	51.8	40.6	81.5	113.8	74.2	18.8	73.4	770
1973	62.7	80.3	75.7	24.6	52.1	111.3	370.1	403.4	93.5	14.2	3.6	19.3	1310.8
1974	32.8	53.8	35.8	15.9	27	99.8	477.9	210.1	56.8	0	0	32.7	1042.6
1975	39.2	59	63.6	42.7	33.1	18	235.7	391.3	153.6	0	0	5.8	1042
1976	115.9	208.4	117.3	65	3	33.3	366.9	442.5	202.5	40.1	0	1	1595.9
1977	72.2	15.2	12.9	54.6	61	142.9	618.1	254.4	38.3	19.3	23.3	20.7	1332.9
1978	50.4	32	100.1	23.3	14.3	139.8	258.9	496.9	171.7	69	70.2	4.1	1430.7
1979	78.2	102.3	171.5	14.1	40.7	28.8	118.5	231	97.6	17.3	36	22.6	958.6
1980	92.8	93.4	125.8	15.6	23.6	80	309.8	189.7	86.2	36.6	14.6	16	1084.1
1981	159.8	79.4	284	84.1	109.6	19.4	530.2	338.3	131.3	10	5	0	1735.1
1982	74.4	87.3	185.4	191	101.7	18.9	159.1	641.4	41.7	25.7	83	24.3	1634.9
1983	131.3	51.5	80.7	284.9	26.2	49.4	258.3	582.2	193	74	2.5	0	1714
1984	0	112.4	75.3	39.6	10	202.2	306.2	245.2	131.5	0	3.6	16.4	1142.4
1985	54	4.5	47	47.4	30.4	8.1	456.6	220.4	63.3	37.7	10.7	143.8	1123.9
1986	12.2	149.1	112.6	66.3	29.9	91.8	85.5	172.9	73	57.6	40.3	46.2	937.4
1987	0.5	133.8	72.7	51.9	99	27.1	63.4	264.5	1.3	74.4	0	7	795.6
1988	17.1	23.2	153.3	6.9	8.6	97.7	450.4	282.1	126.1	31.2	0	72.4	1269
1989	67.6	10.7	71.5	12.7	5.3	57	365.2	369.5	28.4	3.8	2	50.5	1044.2
1990	41.1	105.1	160.2	55.3	TRACE	29.4	327.4	436	168.3	21.1	7.9	177.9	1529.7

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Mean Monthly Tempratures of Islamabad (°C)
(1961 - 1990)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean
1961	10	10	17	21.2	28.2	32.4	29.8	29.3	27.6	21.6	14.2	9.6	20.9
1962	9.4	12.3	17	22.9	27.5	31.6	31	28.3	26.1	21.6	15.3	11.2	21.2
1963	9.7	14.4	16.3	21.4	25.5	33.1	31.8	28.4	26.3	24	16.7	11.9	21.6
1964	7.7	11.8	18.2	22.8	26.3	30.5	29	29.5	26.9	22.6	15.8	11.3	21
1965	11.5	11.4	16.8	19.7	24.8	30.3	29.9	28.1	27.1	23.4	17.5	10.1	20.9
1966	11	14.4	16.5	20.6	27.2	31	29.3	28.5	25.5	21.7	15.4	10	20.9
1967	9.2	11.4	13.6	20.8	26.1	32.1	30.2	27.9	27.5	21.3	15.9	11.2	20.6
1968	9.4	10.8	17.3	22.9	25.9	32	30	27.4	28	21.5	15.6	10.6	21
1969	9.6	12.1	19.4	21.8	26	32.1	31.1	29	27.1	22.8	16.8	12.1	21.7
1970	10.1	13.1	16.7	24.8	29.5	32	30.1	28.5	26.7	23.5	15.8	11.8	21.9
1971	9.3	12.9	18.5	24	28.2	30	28	28.1	25.5	22.1	16.4	----	----
1972	10.5	9.8	17.2	21	27	31.1	31.3	29.5	26.2	21.8	17	11.9	21.2
1973	9.5	13.3	16.6	24	29.2	31.6	29.3	28	27.3	21.7	16.5	10.9	21.5
1974	9.4	10.7	20.9	25.2	28.1	30.3	29.7	29.1	27.4	21.7	16.3	10.1	21.6
1975	10.3	11.3	16	23	27.9	30.6	28.9	28.5	26.7	23.6	15.5	11.9	21.2
1976	10.9	11.8	15.9	21.7	28	30.6	29.9	26.6	26.7	22.3	16.7	11.3	21
1977	9.5	12.7	19.9	23.3	26.3	30.1	28	28.3	27.4	23.3	17.9	12.5	21.6
1978	9.3	12.3	15.5	23.7	31	32.3	28.1	27.7	27.1	22.7	15.9	12.4	21.5
1979	10.7	12.3	15.1	24.2	25.7	31.1	29.9	28.3	26.1	23.3	17.5	12.5	21.4
1980	10.1	12.4	15.4	24.3	29.8	31.1	29	28.7	26.8	23.1	16.9	12.5	21.7
1981	10.3	12.7	16.3	23.3	28.1	30.8	29.3	28.5	26.6	21.7	16	11.6	21.3
1982	10.6	10.6	14.4	21.7	25.1	29.9	30.7	28.1	27.1	22.9	16.5	11.5	20.8
1983	10	11.9	15.3	19.3	26.1	29.4	29.1	28.9	28.2	21.5	16.9	11.6	20.7
1984	9.7	10.5	19.4	22.5	30.4	32.7	28.1	28.7	25.8	21.8	16.3	11	21.4
1985	10.2	13.9	19.7	23.9	28.7	32.3	29.5	28.9	27.7	21.5	16.3	12.5	22.1
1986	10	11.9	15.7	22	25.9	29.1	29.5	28.3	26.8	22.6	17.5	11.5	20.9
1987	11.7	13.3	17.1	22.9	24.3	29.9	31.6	30.1	29	22.9	17.7	13	22
1988	12.1	14.1	16.9	24.9	29.9	31.2	28.7	28.5	27.5	22.4	17.7	12.5	22.2
1989	9.8	11.3	16.7	21.4	28	31.3	29.8	28.2	28	23.3	17.2	12.4	21.4
1990	12.1	12.4	15.9	21.5	30.1	32.3	29.6	28.1	27.7	21.9	17.3	11.7	21.7

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Daily rainfall (mm) of June, July, August in 2000 at Islamabad

Date/Month	June 2000	July 2000	Aug 2000
01	0.0	7.0	66.2
02	0.0	Trace	4.0
03	Trace	0.0	14.0
04	0.0	0.0	0.0
05	Trace	0.0	0.0
06	0.0	0.0	0.0
07	0.0	0.0	36.8
08	0.0	32.0	0.0
09	18.0	17.0	1.0
10	0.0	17.0	15
11	0.0	43.4	0.0
12	0.0	4.0	0.0
13	0.0	1.0	0.0
14	0.0	9.0	0.0
15	2.0	0.0	43.6
16	0.0	0.0	2.6
17	0.0	11.0	36.0
18	3.0	Trace	22.0
19	0.0	Trace	Trace
20	0.0	0.0	0.0
21	0.0	Trace	52.4
22	2.0	3.4	13.0
23	0.0	24.0	0.0
24	Trace	Trace	0.0
25	0.0	Trace	0.0
26	0.0	17.2	0.0
27	0.0	0.0	0.0
28	0.0	0.0	0.0
29	5.6	0.0	52.0
30	38.0	Trace	0.0
31	---	Trace	10.8

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Daily rainfall (mm) of June, July, August in, 2001 at Islamabad

Date/Month	June 2001	July 2001	Aug 2001
01	0.0	36.0	0.0
02	0.0	10.0	0.0
03	Trace	10.0	0.0
04	0.0	0.0	22.5
05	3.5	0.0	0.0
06	0.0	0.0	0.0
07	Trace	0.0	7.0
08	0.0	70.5	20.0
09	0.0	0.5	1.0
10	3.0	7.0	Trace
11	0.0	158.0	0.0
12	0.0	23.0	0.0
13	2.0	1.0	0.0
14	30.5	2.0	0.0
15	10.0	Trace	62.7
16	Trace	54.0	1.0
17	18.0	4.5	0.0
18	0.0	0.0	0.0
19	0.0	0.0	0.0
20	0.0	0.0	0.0
21	0.0	0.0	0.0
22	Trace	0.0	22.0
23	4.0	42.3	43.0
24	19.2	591.8	Trace
25	0.0	10.3	0.0
26	0.0	0.0	0.0
27	28.0	0.0	0.0
28	0.0	27.8	0.0
29	0.0	34.5	0.0
30	0.0	4.0	0.0
31	---	0.0	13.0

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Daily rainfall (mm) of June, July, August in, 2002 at Islamabad

Date/Month	June 2002	July 2002	Aug 2002
01	0.0	0.0	0.0
02	0.0	0.0	0.0
03	3.6	0.0	0.0
04	0.0	0.0	0.0
05	0.0	0.0	2.3
06	0.0	37.0	0.0
07	0.0	0.0	15.6
08	0.0	0.0	Trace
09	0.0	0.0	65.0
10	Trace	Trace	3.8
11	0.0	0.0	Trace
12	Trace	0.0	70.0
13	0.0	Trace	42.7
14	0.0	0.0	66.0
15	0.0	0.0	11.6
16	3.6	0.0	0.0
17	25.2	0.0	0.0
18	0.0	1.0	0.0
19	0.4	0.0	0.0
20	Trace	0.0	Trace
21	0.0	Trace	0.0
22	0.0	Trace	1.2
23	0.0	0.0	22.8
24	101.0	0.0	0.0
25	10.0	16.8	3.7
26	0.0	Trace	38.3
27	0.0	0.0	7.8
28	0.0	0.0	1.0
29	0.0	7.8	Trace
30	0.0	12.7	14.2
31	---	---	Trace

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MEAN MONTHLY MAXIMUM TEMPERATURE °C (1961-90)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1961	16.9	16.2	24.4	27.8	35.8	39.2	34.7	34.2	32.4	29.4	21.7	17.4	27.5
1962	17.1	19.3	23.7	30.4	35.2	39.1	36.3	33.2	31.6	29.8	23.4	19.3	28.2
1963	18.7	22.4	22.5	28.2	32.5	40.1	37.4	33.4	32.4	32.1	23.7	20.3	28.6
1964	13.6	18.7	26.1	30.1	34.7	38	34.4	34.2	32.7	31.8	25.6	18.9	28.2
1965	18.7	17.2	23.7	25.7	32.2	38.3	35.7	33.8	34.4	31.5	25.6	19.8	28.1
1966	20.8	20.9	23.4	27.6	35.7	38.2	34.9	33.7	31.6	29.7	25.6	19.9	28.5
1967	18.4	21.3	23.5	28.5	34.2	39.9	35.1	32.4	33.4	29.6	23.7	17.7	28.1
1968	15	17.4	24.6	30.9	32.7	39.7	35.3	32.7	35.8	29.8	24.8	18.2	28.1
1969	17.2	18.8	27.9	29.4	33.2	40.3	36.5	34.2	34.1	30.8	25.7	22.6	29.2
1970	18.1	21	23.6	33.6	38	38.8	36.1	32.8	32.2	31.6	25.7	21.4	29.4
1971	17.8	20.6	26.6	31.9	35.2	35.8	33.6	32.8	33.2	31.9	25.8	----	----
1972	18.3	16.7	24.6	29.1	35.2	39.6	37.8	34.8	32.3	29.9	25.3	18	28.5
1973	15.9	19.7	22.9	31.8	36	38	33.6	32.2	32.8	30.2	25.4	19.1	28.1
1974	16.8	17.2	26.7	32.7	35.4	37.4	35.1	34.1	33.9	31.4	26	16.4	28.6
1975	17.1	17.5	23.1	30.5	35.5	38.1	34.2	33.1	32.3	32.7	25.3	20.3	28.3
1976	17.6	17.3	22	28.8	36	38.1	34.6	30.7	32.7	30.6	26.7	20.2	27.9
1977	16	21.4	29.1	30.1	33.3	36.7	32.4	33.1	33.8	31	26.7	20.4	28.7
1978	16.4	18.9	21.6	31.3	39.8	39.4	32	32.1	33.1	30.8	23.2	21.5	28.3
1979	13.5	19	21.5	31.5	33.3	39.3	34.6	33.5	33.2	31.7	26.1	20.3	28.5
1980	16.9	13.9	21.3	32.6	35.4	38.5	34.2	34.3	33.9	31.9	26.1	21.2	29
1981	16.3	19.3	22.5	31.3	35.5	39.3	34.8	34.7	34.4	31	25.5	21.6	29
1982	18.2	16.6	20.1	29	32	38.4	37.5	33.1	35	31.6	25	18.7	27.9
1983	17.7	19.2	22.2	25.4	33.4	36.9	35.2	33.3	34	30	27.3	20.5	27.9
1984	18.9	17.7	27.3	30.3	39.9	39.8	32.7	33.3	32.4	32.1	25.5	19.7	29.1
1985	17.6	23	28.4	31.7	37.3	40.7	34.5	34.2	34.6	30	25.7	19.1	29.7
1986	18.6	18.7	22	29.9	34	36.6	34.6	33.2	33.9	30.6	25.8	18.8	28.1
1987	20.4	20.7	23.1	31.2	31	38.3	39	35.9	36.1	30.9	27.9	22.1	29.7
1988	19.6	21.5	23.2	33.2	38.6	38.6	33	33.9	34.1	31	27	20.4	29.5
1989	17.1	18.7	23.3	29.3	36.5	38.9	35.7	33.4	34.9	32.4	25.5	19.5	28.8
1990	13.9	19.3	22.3	29.7	37.5	39.5	35	32.9	33	29.8	26.1	18.5	28.4

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Mean Monthly Minimum Temperatures °C (1961-90)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1961	3.1	3.7	9.6	14.6	20.6	25.6	24.8	24.3	22.8	13.8	6.6	1.7	14.3
1962	1.6	5.2	10.3	15.4	19.7	24.1	25.6	23.4	20.6	13.4	7.1	3.1	14.1
1963	0.7	6.4	10	14.6	18.6	26.1	26.1	23.4	20.1	16	9.7	3.6	14.6
1964	1.8	4.8	10.3	15.4	17.8	22.9	23.5	24.8	21.1	13.4	6	3.7	13.8
1965	4.2	5.6	9.8	13.6	17.4	22.3	24.1	22.4	19.7	15.2	9.3	0.4	13.7
1966	1.3	7.9	9.7	13.6	18.6	23.8	23.6	23.3	19.4	13.6	5.1	0.1	13.3
1967	0	1.6	3.7	13.1	18	24.3	25.3	23.4	21.5	13	8.1	4.6	13.1
1968	3.7	4.2	10	14.9	19	24.2	24.7	22.2	20.4	13.2	6.6	3.1	13.8
1969	1.9	5.5	10.8	14.1	18.8	23.9	25.7	23.9	20.1	14.8	7.8	1.6	14.1
1970	2.1	5.1	9.8	15.9	20.9	25.1	24.2	24.1	21.2	15.4	5.8	2.2	14.3
1971	0.9	5.2	10.3	16.2	21.1	24.3	22.5	23.4	17.9	12.4	7	----	----
1972	2.8	2.8	9.8	13	18.7	22.6	24.9	24.1	20.1	13.7	8.7	5.7	13.9
1973	3.1	6.8	10.3	16.3	22.4	25.3	25.1	23.9	21.8	13.2	7.5	2.7	14.9
1974	2	4.2	15	17.7	20.8	23.1	24.2	24.1	20.9	11.9	6.7	3.7	14.5
1975	3.6	5	8.9	15.6	20.3	23.2	23.6	23.9	21	14.5	5.6	3.5	14.1
1976	4.1	6.3	9.7	14.7	20	23.1	25.1	22.5	20.7	14.1	6.8	2.5	14.1
1977	3.1	4	10.8	16.5	19.2	23.4	23.6	23.5	21	15.6	9.2	4.5	14.5
1978	2.3	5.7	9.3	16.1	22.3	25.1	24.1	23.4	21.1	14.7	8.7	3.3	14.7
1979	2.9	5.5	8.7	16.9	18	22.9	25.3	22.8	19.1	14.8	8.8	4.6	14.2
1980	3.2	6	9.6	16.1	21.2	23.7	23.8	23.1	19.7	14.4	7.7	3.8	14.4
1981	3.9	6.2	10	15.3	19.8	22.2	23.7	22.4	18.8	12.3	6.5	1.6	13.6
1982	3	4.6	8.7	14.5	18.1	21.3	23.9	23.1	19.2	14.3	7.9	4.4	13.6
1983	2.3	4.6	8.3	13.3	18.8	21.9	23	24.3	22.4	13	6.6	2.7	13.4
1984	0.6	3.3	11.5	14.7	20.9	25.6	23.5	24.1	19.1	11.5	7	2.3	13.7
1985	2.8	4.8	11.1	16	20.1	24	24.3	23.5	20.9	12.9	7	5.8	14.4
1986	1.4	5	9.3	14.1	17.9	21.7	24.3	23.4	19.7	14.6	9.1	4.2	13.7
1987	2.9	5.9	11.1	14.6	17.6	21.5	24.2	24.3	21.9	15	7.5	4	14.2
1988	4.7	6.6	10.6	16.7	21.2	23.8	24.4	23.2	21	13.8	8.4	4.6	14.9
1989	2.5	3.9	10.2	13.5	19.5	23.7	24	23	21.1	14.3	8.9	5.4	14.2
1990	5.4	6.5	9.4	14.4	22.6	25.1	24.2	23.5	22.4	14	3.4	4.9	15.1

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MEAN MONTHLY RELATIVE HUMIDITY % AT 1200 UTC (1961-90)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1960	46	34	47	33	22	18	53	54	47	25	27	31	37.2
1961	48	42	32	35	19	24	55	57	62	36	43	42	41.3
1962	40	46	39	31	19	20	41	57	49	33	35	45	37.9
1963	27	32	42	35	25	20	34	54	46	28	44	43	35.9
1964	58	39	33	30	23	22	47	56	44	19	22	43	36.3
1965	40	50	37	45	28	19	38	44	31	32	37	29	35.8
1966	25	45	39	34	18	26	41	55	47	33	24	29	34.7
1967	26	35	35	28	18	17	50	62	48	33	39	57	37.3
1968	56	51	40	28	24	25	48	62	36	36	41	37	40.3
1969	39	41	32	27	24	18	42	54	41	41	41	31	35.9
1970	34	34	37	21	16	25	43	63	56	40	34	33	36.3
1971	35	30	23	29	29	48	54	63	43	34	42	52	40.2
1972	43	37	40	32	23	23	40	47	39	32	38	56	37.5
1973	50	41	38	23	20	33	58	66	56	39	39	42	42.1
1974	38	41	28	21	20	23	49	55	39	23	27	53	34.8
1975	39	39	35	26	18	23	52	63	54	33	27	33	36.8
1976	44	54	38	33	19	21	58	62	50	39	37	36	40.9
1977	44	22	18	33	29	31	63	58	49	46	46	50	41.2
1978	42	35	40	33	13	28	66	67	52	41	47	41	41.7
1979	48	49	43	32	24	27	53	57	44	37	40	50	42.2
1980	47	46	49	24	19	30	58	55	48	41	45	47	42.4
1981	53	49	47	30	30	25	58	66	50	38	43	36	43.8
1982	46	53	52	38	40	29	35	62	45	47	55	60	46.8
1983	46	38	40	47	36	29	49	68	54	47	43	41	44.8
1984	31	35	31	36	22	32	60	65	47	30	44	42	39.6
1985	46	22	25	27	16	21	54	61	50	42	41	61	38.8
1986	42	46	48	30	28	29	55	59	44	48	49	51	44.1
1987	35	40	50	30	40	28	31	54	47	39	34	41	39.1
1988	38	35	40	27	16	29	68	59	51	38	47	55	41.9
1989	46	39	45	24	20	25	46	58	40	35	39	59	39.7
1990	57	64	46	33	28	32	58	67	60	43	44	60	49.3

ZIA-[illegible] KHAN
[illegible]
Pakistan Meteorological Deptt.

MONTHLY AVERAGE MINIMUM TEPERATURE (°C) OF ISLAMABAD (1991-2001)

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
1991	2.9	6.1	10.2	13.9	19.3	22.5	24.7	23.6	21.4	12.7	7.5	5.7
1992	5.2	5.5	9.9	14.6	18.9	23.4	24	24.2	20.5	14.5	8.5	5.5
1993	3	7.4	8.8	15.9	21.5	22.8	24	23.7	20.5	13.1	8.5	3.7
1994	4.4	5.4	11.5	14	20.8	24.7	24.5	24.2	19.5	13.6	8.7	5
1995	2.4	5.9	9.5	14.2	19.7	23.5	24.3	24	20.9	15.2	7.5	3.7
1996	1.9	6.1	11.1	17.8	17.6	22.8	24.1	22.9	21.2	13	6.1	1.2
1997	2.1	4.7	10.2	14.3	17.7	23	25.5	23.6	22.1	15.1	8.3	5.2
1998	3.4	6.2	9.8	16.4	20.9	23.4	24.5	23.8	21.9	15.9	8.1	3.2
1999	4.8	7.8	10.5	16.4	21.3	24.7	24.8	24	22.8	15.2	9.7	3.6
2000	4	5	10.3	17.2	24.6	25.6	24.7	23.3	21	15.9	9.7	4.4
2001	.5	4.7	10.0	15.4	22.0	23.3	23.8	24.1	19.7	14.4	7.4	4.0

MONTHLY AVERAGE MAXIMUM TEMPERATURE (°C) OF ISLAMABAD (1991-2001)

YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
1991	16.8	18.3	22.9	26.4	33.3	37.9	36.8	33.4	31.7	29.6	25	19.3
1992	16.4	18.1	22.2	28.1	32.9	38.4	34.6	33.3	32.2	30.3	25	20.3
1993	15.9	22.4	21.5	30.8	37.1	38.1	34.4	35.4	32.5	31.7	27.1	22.4
1994	18.2	17.7	26	28.7	35.8	40.1	33.3	32.4	32.9	29.8	25.8	18.2
1995	17.5	19.3	23	26.5	36.2	40.7	33.1	33	34.1	31.1	25.9	18.5
1996	17.8	20.9	24.5	31.2	34.3	36	35.9	32.5	33.5	29.9	26.4	22.1
1997	18.3	20.7	23.8	26.7	31.6	36.3	35	32.7	33.1	26.9	23.4	17
1998	17	18.7	22.4	30.9	35.8	38.7	35.3	33.6	33.8	31.3	27.9	21.9
1999	16.6	20.6	24.6	34.1	37.9	39.1	36.1	34.2	34.5	31.9	25.2	22.6
2000	17.6	18.6	25	33.7	39.7	39.9	34.8	34	33	32.9	26.5	22
2001	19.7	23.8	27.8	31.3	39.7	36.5	33.3	34.4	34.2	32.1	27.2	22.2

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Flash Flood/Cloud Burst Of 23rd July, 2001
Worst Ever To Hit Twin Cities in History

On 23rd July 2001, after 10 hours of continuous downpour from 0600-1600 PST, in somewhat cloudburst proportion, the local stream "called Nulla Lai" and all of its contributory streams, rose to such heights that the phenomenon will be remembered as the "2001 Flood."

The Nulla Lai made a clean sweep of all surrounding buildings and some road bridges which crossed it. It was the worst flash flood ever experienced in the twin cities. There were other flash floods in the past. But most old timers say that those were "insignificant" compared to the current one.

Synoptic History:

This flood was caused by a freak combination of disastrous weather events.

Hot & very humid weather which prevailed over upper parts of the country during last three days(July 19th- 22nd , 2001) resulted high degree of instability over the area. On 23rd, at 0500PST, a surface low pressure formed over Hazara & Malakand Divisions between 34-37°N & 70-75°E with central pressure less than 996 hPa. There was a gradually accentuating upper air westerly trough at 500 hPa between 40-50°N & 60-70°E. There was very strong influx of moisture from Arabian Sea & from Bay of Bangal at surface level upto 7000 ft. 700 mb chart depicted some what isolated circulation over the area that acted as convergence / vortex of southwest relatively warm-moist currents and relatively cool-moist currents from Bay of Bangal.

Surface pressure pattern on 23rd July at 0500 PST

C.P chart at 700 mb on 23rd July, 2001

Consequently the Occlusion took place. The vortex formation was further accentuated by the topographical feature having Northwest and South-Eastern Himalayan range on one side and North-east and South-West Sulaiman range on the other. Thus allowing the air mass to be trapped and rise vertically due to orography.

A large stationary high pressure ridge just south/southwest of Capital territory, prevented this system from turning to the WSW, a common pattern for weather systems movements. Instead the system swept directly towards the upper parts of twin cities and Hazara Division. Its advancement to the WSW was abruptly and completely halted.

During the 10 hrs weather event, the ridges of the twin cities were completely saturated by torrential rains. The heaviest rains ever recorded in the one hour were between 11am to 12noon amounting to 181 mm.

Pakistan Meteorological Department (PMD) issued heavy rainfall forecast in its Weather Broadcast

Bulletin a day earlier and flash-flood warning was issued almost 5 hours in advance.

The rain began falling in Islamabad at 6 a.m. on Monday and continued till 4 p.m. During this period, the measurement was 621 mm, the heaviest rain ever to fall in the city in that length of time. The resulting flash flood took an immense toll in damage, almost impossible to estimate accurately.

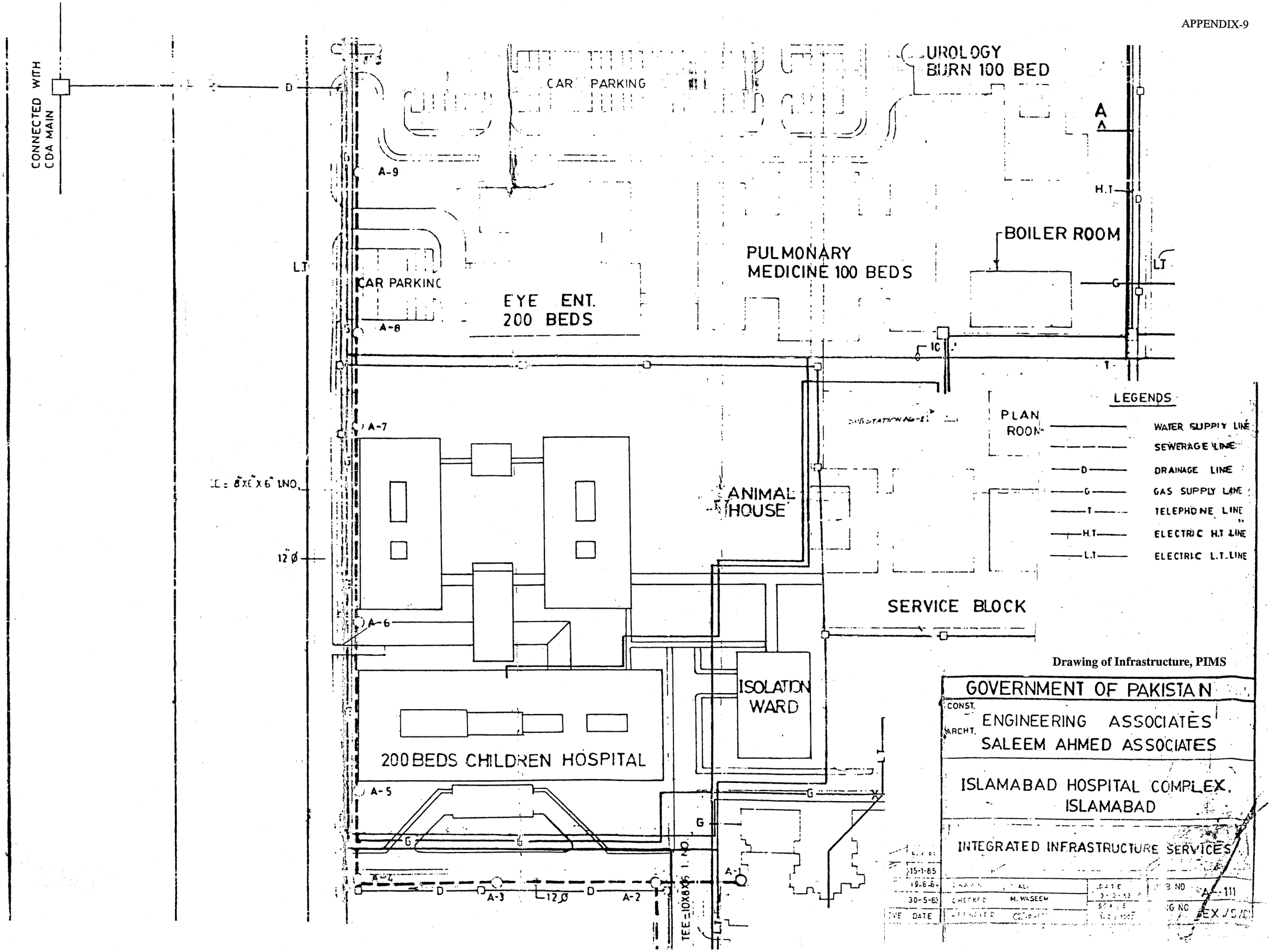
Maximum capacity of Nulla Lai was 24 ft whereas water level rose to 34 feet causing the Nulla to over-flow. Flood water in certain low-lying areas was as high as 18 feet. Every bridge on the Nulla Lai and its tributaries was over-flown by floodwater. The approaches to the many bridges in each direction were destroyed.

Water poured through the streets of Rawalpindi during the evening of 23rd and the following day, and reports from the area stated that streams were booming. Many shops/underground stores of daily used items, electronics, cloth etc were completely filled with flood waters. Business community suffered millions of dollars losses.

The roaring waters Monday evening left nothing in their path. The water began receding during night; and the decline was rapid. The devastation was such that the government had to deploy 9000 army personnel to help the local administration in rescue and relief operations. Loss to the business community runs into billions. Only medicines worth Rs.500 million were destroyed.

On account of the above mentioned severe weather system, Saidu Sharif in Swat valley (Malakand Division) and Balakot in Mansehra (Hazara Division) received 100 mm and 300 mm of rainfall on the night of 22nd July. Because of the hilly terrain, these rains caused flash floods in the local nullas and rivers. Speedy flood waters and striking of lightning had their toll of life and property in District Bunair (Malakand Division) and Dadar village in District Mansehra (Hazara Division) where the people in their sound slumber, were swept away before they could sense the approaching disaster.

The official figures concerning loss of life and property are detailed below. However, un-official figures in some cases are more than double.



Drawing of Infrastructure, PIMS