S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00
S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00
S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.00
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.00
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.010
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.00
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.00
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.011

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	28.900	20.00	0.000	2.500	0.000	100.55	0.000	16.979	140.0	5.000
S3.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	2.350	75.00	5.000
D1	28.900	20.00	0.000	2.500	0.000	100.55	0.000	18.174	141.0	5.000
S2.0	28.900	20.00	0.000	2.500	0.000	100.55	0.000	1.912	182.0	13.00
B	28.900	20.00	1.500	2.500	0.000	100.55	128.55	2.667	75.00	0.000
B1	28.900	20.00	0.000	2.500	0.000	100.55	0.000	0.1504	94.00	0.000
S2.1	28.900	20.00	1.500	2.500	0.000	100.55	128.55	6.876	192.0	0.000
S4.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	3.134	75.00	0.000
S1.1	28.900	20.00	0.000	2.500	0.000	100.55	0.000	2.015	183.0	0.000
D2	28.900	20.00	0.000	2.500	0.000	100.55	0.000	28.173	150.0	7.000
S5.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	2.215	75.00	0.000

D3	28.900	20.00	0.000	2.500	0.000	100.55	0.000	29.062	157.0 3.000
S1.2	28.900	20.00	0.000	2.500	0.000	100.55	0.000	3.648	151.0 0.000
S7.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	20.389	75.00 1.000
D4	28.900	20.00	0.000	2.500	0.000	100.55	0.000	42.922	152.0 1.500
S9.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	1.404	75.00 0.000
A	28.900	20.00	1.500	2.500	0.000	100.55	128.55	4.112	75.00 0.000
S6.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	5.246	75.00 0.000
D5	28.900	20.00	0.000	2.500	0.000	100.55	0.000	47.962	154.0 1.500
S10.0	28.900	20.00	0.000	2.500	0.000	100.55	0.000	1.206	135.0 0.000
S8.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	6.352	75.00 0.000
S8.1	28.900	20.00	1.500	2.500	0.000	100.55	128.55	7.877	75.00 9.000
D6	28.900	20.00	0.000	2.500	0.000	100.55	0.000	53.479	156.0 6.000
S12.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	4.287	75.00 0.000
S11.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	2.482	75.00 0.000
D7	28.900	20.00	0.000	2.500	0.000	100.55	0.000	56.646	161.0 2.500
S13.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	14.270	75.00 0.000
S14.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	0.9562	75.00 0.000
S14.1	28.900	20.00	1.500	2.500	0.000	100.55	128.55	2.073	75.00 9.000
D8	28.900	20.00	0.000	2.500	0.000	100.55	0.000	67.183	89.00 2.500
S16.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	10.487	75.00 0.000
S15.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	3.356	90.00 0.000
D9	28.900	20.00	0.000	2.500	0.000	100.55	0.000	77.409	90.00 5.000
S17.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	13.654	75.00 0.000
S17.1	28.900	20.00	1.500	2.500	0.000	100.55	128.55	19.182	75.00 0.000
S18.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	4.118	90.00 0.000
D10	28.900	20.00	0.000	2.500	0.000	100.55	0.000	89.388	90.00 4.300
S19.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	6.471	75.00 0.000
S20.0	28.900	20.00	1.500	2.500	0.000	100.55	128.55	4.712	90.00 0.000
Outlet	28.900	20.00	0.000	2.500	0.000	100.55	0.000	95.530	94.00 0.000

LINK S1.0 8.000

ESTIMATED VOLUME (CU METRES*10**3) = 212.7
ESTIMATED PEAK FLOW (CUMECS) = 19.
ESTIMATED TIME TO PEAK (MINS) = 161.00

LINK S3.0 8.000

ESTIMATED VOLUME (CU METRES*10**3) = 17.54
ESTIMATED PEAK FLOW (CUMECS) = 2.1

```
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK D1                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  230.2
ESTIMATED PEAK FLOW          (CUMECS) =                20.
ESTIMATED TIME TO PEAK          (MINS) =              156.00

LINK S2.0               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  31.22
ESTIMATED PEAK FLOW          (CUMECS) =                2.0
ESTIMATED TIME TO PEAK          (MINS) =              211.00

LINK B                  8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  31.94
ESTIMATED PEAK FLOW          (CUMECS) =                2.3
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK B1                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  1.211
ESTIMATED PEAK FLOW          (CUMECS) =                0.15
ESTIMATED TIME TO PEAK          (MINS) =              136.00

LINK S2.1               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  121.2
ESTIMATED PEAK FLOW          (CUMECS) =                7.1
ESTIMATED TIME TO PEAK          (MINS) =              222.00

LINK S4.0               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  26.03
ESTIMATED PEAK FLOW          (CUMECS) =                2.7
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S1.1               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  33.07
ESTIMATED PEAK FLOW          (CUMECS) =                2.1
ESTIMATED TIME TO PEAK          (MINS) =              215.00

LINK D2                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  410.6
ESTIMATED PEAK FLOW          (CUMECS) =                30.
ESTIMATED TIME TO PEAK          (MINS) =              176.00

LINK S5.0               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  16.49
ESTIMATED PEAK FLOW          (CUMECS) =                2.0
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK D3                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  427.0
ESTIMATED PEAK FLOW          (CUMECS) =                31.
ESTIMATED TIME TO PEAK          (MINS) =              180.00

LINK S1.2               8.000

ESTIMATED VOLUME (CU METRES*10**3) =                  48.25
ESTIMATED PEAK FLOW          (CUMECS) =                3.9
ESTIMATED TIME TO PEAK          (MINS) =              177.00

LINK S7.0               8.000
```

```
ESTIMATED VOLUME (CU METRES*10**3) =                186.9
ESTIMATED PEAK FLOW         (CUMECS) =                16.
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK D4                8.000

ESTIMATED VOLUME (CU METRES*10**3) =                662.1
ESTIMATED PEAK FLOW         (CUMECS) =                45.
ESTIMATED TIME TO PEAK         (MINS) =              181.00

LINK S9.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                10.16
ESTIMATED PEAK FLOW         (CUMECS) =                 1.3
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK A                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                35.33
ESTIMATED PEAK FLOW         (CUMECS) =                 3.4
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK S6.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                68.90
ESTIMATED PEAK FLOW         (CUMECS) =                 5.2
ESTIMATED TIME TO PEAK         (MINS) =              150.00

LINK D5                8.000

ESTIMATED VOLUME (CU METRES*10**3) =                741.2
ESTIMATED PEAK FLOW         (CUMECS) =                50.
ESTIMATED TIME TO PEAK         (MINS) =              181.00

LINK S10.0             8.000

ESTIMATED VOLUME (CU METRES*10**3) =                14.51
ESTIMATED PEAK FLOW         (CUMECS) =                 1.4
ESTIMATED TIME TO PEAK         (MINS) =              155.00

LINK S8.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                57.22
ESTIMATED PEAK FLOW         (CUMECS) =                 5.1
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK S8.1              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                70.31
ESTIMATED PEAK FLOW         (CUMECS) =                 6.4
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK D6                8.000

ESTIMATED VOLUME (CU METRES*10**3) =                825.9
ESTIMATED PEAK FLOW         (CUMECS) =                56.
ESTIMATED TIME TO PEAK         (MINS) =              155.00

LINK S12.0             8.000

ESTIMATED VOLUME (CU METRES*10**3) =                36.78
ESTIMATED PEAK FLOW         (CUMECS) =                 3.6
ESTIMATED TIME TO PEAK         (MINS) =              120.00

LINK S11.0             8.000

ESTIMATED VOLUME (CU METRES*10**3) =                18.90
ESTIMATED PEAK FLOW         (CUMECS) =                 2.2
ESTIMATED TIME TO PEAK         (MINS) =              120.00
```

```
LINK D7                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 881.5
ESTIMATED PEAK FLOW          (CUMECS) =                 59.
ESTIMATED TIME TO PEAK          (MINS) =              161.00

LINK S13.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 117.5
ESTIMATED PEAK FLOW          (CUMECS) =                 12.
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S14.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 5.608
ESTIMATED PEAK FLOW          (CUMECS) =                0.72
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S14.1              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 14.81
ESTIMATED PEAK FLOW          (CUMECS) =                 1.7
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK D8                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1014.
ESTIMATED PEAK FLOW          (CUMECS) =                 69.
ESTIMATED TIME TO PEAK          (MINS) =              164.00

LINK S16.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 62.23
ESTIMATED PEAK FLOW          (CUMECS) =                 7.9
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S15.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 22.68
ESTIMATED PEAK FLOW          (CUMECS) =                 3.1
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK D9                 8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1099.
ESTIMATED PEAK FLOW          (CUMECS) =                 73.
ESTIMATED TIME TO PEAK          (MINS) =              167.00

LINK S17.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 95.22
ESTIMATED PEAK FLOW          (CUMECS) =                 11.
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S17.1              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 127.9
ESTIMATED PEAK FLOW          (CUMECS) =                 15.
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK S18.0              8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 32.52
ESTIMATED PEAK FLOW          (CUMECS) =                 3.8
ESTIMATED TIME TO PEAK          (MINS) =              120.00

LINK D10                8.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1259.
ESTIMATED PEAK FLOW          (CUMECS) =                 86.
```

```
 ESTIMATED TIME TO PEAK          (MINS) =              143.00

 LINK S19.0              8.000

 ESTIMATED VOLUME (CU METRES*10**3) =                38.19
 ESTIMATED PEAK FLOW          (CUMECS) =                 4.9
 ESTIMATED TIME TO PEAK          (MINS) =              120.00

 LINK S20.0              8.000

 ESTIMATED VOLUME (CU METRES*10**3) =                32.41
 ESTIMATED PEAK FLOW          (CUMECS) =                 4.3
 ESTIMATED TIME TO PEAK          (MINS) =              120.00

 LINK Outlet             8.000

 ESTIMATED VOLUME (CU METRES*10**3) =                1330.
 ESTIMATED PEAK FLOW          (CUMECS) =                  92.
 ESTIMATED TIME TO PEAK          (MINS) =              147.00


################################################################################
#####
Existing - 100 year re-run - Hyder Sept 2010

Results for period from  0: 0.0  1/ 1/1990
                     to 16:40.0  1/ 1/1990
################################################################################
#####

                                ROUTING INCREMENT (MINS) =       1.00
                                STORM DURATION (MINS)    =       360.
                                RETURN PERIOD (YRS)      =       100.
                                BX                       =    1.0000
                                TOTAL OF FIRST SUB-AREAS  (ha) =     689.69
                                TOTAL OF SECOND SUB-AREAS (ha) =     386.68
                                TOTAL OF ALL SUB-AREAS (ha)    =    1076.37

     SUMMARY OF CATCHMENT AND RAINFALL DATA
 Link      Catch. Area      Slope    % Impervious     Pern        B        Link
 Label      #1     #2      #1   #2     #1   #2      #1   #2     #1   #2    No.
             (ha)              (%)          (%)
S1.0       189.00  0.000  1.700 0.000  5.000 0.000  .050 0.00  .4083 0.000  1.000

S3.0        6.840  6.840  1.200 1.200  5.000 100.0  .050 .015  .0865 .0037  2.000

D1         .00001  0.000  .0010 0.000  0.000 0.000  .025 0.00  .0021 0.000  1.001

S2.0       28.000  0.000  .3000 0.000  5.000 0.000  .050 0.00  .3594 0.000  3.000

B          17.350  8.701  .5000 .5000  0.000 100.0  .050 .015  .2700 .0065  4.000

B1          1.073  0.000  .5000 0.000  5.000 0.000  .050 0.00  .0511 0.000  5.000

S2.1       47.903  2.521  .5000 .5000  0.000 100.0  .050 .015  .4578 .0034  3.001

S4.0       10.150 10.150  .7000 .7000  5.000 100.0  .050 .015  .1389 .0059  6.000

S1.1       29.650  0.000  .3000 0.000  5.000 0.000  .050 0.00  .3703 0.000  7.000

D2         .00001  0.000  .0010 0.000  0.000 0.000  .025 0.00  .0021 0.000  1.002

S5.0        6.430  6.430  1.200 1.200  5.000 100.0  .050 .015  .0837 .0036  8.000

D3         .00001  0.000  .0010 0.000  0.000 0.000  .025 0.00  .0021 0.000  1.003
```

S1.2	42.887	0.000	.7000	0.000	5.000	0.000	.050	0.00	.2940	0.000	9.000
S7.0	73.180	73.180	.5000	.5000	5.000	100.0	.050	.015	.4591	.0196	10.00
D4	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.004
S9.0	3.960	3.960	1.200	1.200	5.000	100.0	.050	.015	.0651	.0028	11.00
A	13.232	14.221	.7000	.7000	0.000	100.0	.050	.025	.1983	.0142	12.00
S6.0	28.014	1.474	.7000	.7000	0.000	100.0	.050	.025	.2928	.0044	12.00
D5	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.005
S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00
S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00
S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.00
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.00
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.010
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.00
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.00
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.011

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	24.200	20.00	0.000	2.500	0.000	112.87	0.000	18.700	161.0	5.000
S3.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	2.123	120.0	5.000
D1	24.200	20.00	0.000	2.500	0.000	112.87	0.000	20.041	156.0	5.000
S2.0	24.200	20.00	0.000	2.500	0.000	112.87	0.000	1.985	211.0	13.00
B	24.200	20.00	1.500	2.500	0.000	112.87	143.70	2.301	120.0	0.000

B1	24.200	20.00	0.000	2.500	0.000	112.87	0.000	0.1461	136.0	0.000
S2.1	24.200	20.00	1.500	2.500	0.000	112.87	143.70	7.140	222.0	0.000
S4.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	2.704	120.0	0.000
S1.1	24.200	20.00	0.000	2.500	0.000	112.87	0.000	2.081	215.0	0.000
D2	24.200	20.00	0.000	2.500	0.000	112.87	0.000	29.944	176.0	7.000
S5.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	2.008	120.0	0.000
D3	24.200	20.00	0.000	2.500	0.000	112.87	0.000	30.876	180.0	3.000
S1.2	24.200	20.00	0.000	2.500	0.000	112.87	0.000	3.858	177.0	0.000
S7.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	16.177	120.0	1.000
D4	24.200	20.00	0.000	2.500	0.000	112.87	0.000	44.542	181.0	1.500
S9.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	1.298	120.0	0.000
A	24.200	20.00	1.500	2.500	0.000	112.87	143.70	3.377	120.0	0.000
S6.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	5.194	150.0	0.000
D5	24.200	20.00	0.000	2.500	0.000	112.87	0.000	49.604	181.0	1.500
S10.0	24.200	20.00	0.000	2.500	0.000	112.87	0.000	1.365	155.0	0.000
S8.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	5.131	120.0	0.000
S8.1	24.200	20.00	1.500	2.500	0.000	112.87	143.70	6.409	120.0	9.000
D6	24.200	20.00	0.000	2.500	0.000	112.87	0.000	55.733	155.0	6.000
S12.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	3.610	120.0	0.000
S11.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	2.230	120.0	0.000
D7	24.200	20.00	0.000	2.500	0.000	112.87	0.000	59.469	161.0	2.500
S13.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	12.333	120.0	0.000
S14.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	0.7217	120.0	0.000
S14.1	24.200	20.00	1.500	2.500	0.000	112.87	143.70	1.684	120.0	9.000
D8	24.200	20.00	0.000	2.500	0.000	112.87	0.000	68.546	164.0	2.500
S16.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	7.878	120.0	0.000
S15.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	3.067	120.0	0.000
D9	24.200	20.00	0.000	2.500	0.000	112.87	0.000	73.111	167.0	5.000
S17.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	10.741	120.0	0.000
S17.1	24.200	20.00	1.500	2.500	0.000	112.87	143.70	14.888	120.0	0.000
S18.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	3.772	120.0	0.000
D10	24.200	20.00	0.000	2.500	0.000	112.87	0.000	85.571	143.0	4.300
S19.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	4.864	120.0	0.000
S20.0	24.200	20.00	1.500	2.500	0.000	112.87	143.70	4.272	120.0	0.000
Outlet	24.200	20.00	0.000	2.500	0.000	112.87	0.000	92.379	147.0	0.000

```
LINK S1.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 244.8
ESTIMATED PEAK FLOW          (CUMECS) =                 20.
ESTIMATED TIME TO PEAK          (MINS) =              331.00

LINK S3.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 20.36
ESTIMATED PEAK FLOW          (CUMECS) =                 1.9
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D1                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 265.1
ESTIMATED PEAK FLOW          (CUMECS) =                 22.
ESTIMATED TIME TO PEAK          (MINS) =              335.00

LINK S2.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 35.80
ESTIMATED PEAK FLOW          (CUMECS) =                 2.3
ESTIMATED TIME TO PEAK          (MINS) =              351.00

LINK B                 9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 36.90
ESTIMATED PEAK FLOW          (CUMECS) =                 2.7
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK B1                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1.395
ESTIMATED PEAK FLOW          (CUMECS) =                0.14
ESTIMATED TIME TO PEAK          (MINS) =              317.00

LINK S2.1              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 139.4
ESTIMATED PEAK FLOW          (CUMECS) =                 8.7
ESTIMATED TIME TO PEAK          (MINS) =              330.00

LINK S4.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 30.19
ESTIMATED PEAK FLOW          (CUMECS) =                 2.6
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S1.1              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 37.90
ESTIMATED PEAK FLOW          (CUMECS) =                 2.4
ESTIMATED TIME TO PEAK          (MINS) =              355.00

LINK D2                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 472.6
ESTIMATED PEAK FLOW          (CUMECS) =                 34.
ESTIMATED TIME TO PEAK          (MINS) =              340.00

LINK S5.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 19.13
ESTIMATED PEAK FLOW          (CUMECS) =                 1.8
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D3                9.000
```

```
ESTIMATED VOLUME (CU METRES*10**3) =                491.6
ESTIMATED PEAK FLOW         (CUMECS) =                 35.
ESTIMATED TIME TO PEAK         (MINS) =              337.00

LINK S1.2              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                55.44
ESTIMATED PEAK FLOW         (CUMECS) =                4.2
ESTIMATED TIME TO PEAK         (MINS) =              331.00

LINK S7.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                216.6
ESTIMATED PEAK FLOW         (CUMECS) =                 17.
ESTIMATED TIME TO PEAK         (MINS) =              300.00

LINK D4                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                763.6
ESTIMATED PEAK FLOW         (CUMECS) =                 53.
ESTIMATED TIME TO PEAK         (MINS) =              331.00

LINK S9.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                11.79
ESTIMATED PEAK FLOW         (CUMECS) =                1.2
ESTIMATED TIME TO PEAK         (MINS) =              300.00

LINK A                 9.000

ESTIMATED VOLUME (CU METRES*10**3) =                40.96
ESTIMATED PEAK FLOW         (CUMECS) =                3.4
ESTIMATED TIME TO PEAK         (MINS) =              300.00

LINK S6.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                79.52
ESTIMATED PEAK FLOW         (CUMECS) =                5.9
ESTIMATED TIME TO PEAK         (MINS) =              330.00

LINK D5                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                854.9
ESTIMATED PEAK FLOW         (CUMECS) =                 59.
ESTIMATED TIME TO PEAK         (MINS) =              333.00

LINK S10.0             9.000

ESTIMATED VOLUME (CU METRES*10**3) =                16.70
ESTIMATED PEAK FLOW         (CUMECS) =                1.4
ESTIMATED TIME TO PEAK         (MINS) =              331.00

LINK S8.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                66.29
ESTIMATED PEAK FLOW         (CUMECS) =                5.3
ESTIMATED TIME TO PEAK         (MINS) =              300.00

LINK S8.1              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                81.47
ESTIMATED PEAK FLOW         (CUMECS) =                6.6
ESTIMATED TIME TO PEAK         (MINS) =              300.00

LINK D6                9.000

ESTIMATED VOLUME (CU METRES*10**3) =                953.0
ESTIMATED PEAK FLOW         (CUMECS) =                 66.
ESTIMATED TIME TO PEAK         (MINS) =              335.00
```

```
LINK S12.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 42.66
ESTIMATED PEAK FLOW          (CUMECS) =                3.6
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK S11.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 21.94
ESTIMATED PEAK FLOW          (CUMECS) =                2.0
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK D7                 9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1017.
ESTIMATED PEAK FLOW          (CUMECS) =                70.
ESTIMATED TIME TO PEAK          (MINS) =             341.00

LINK S13.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 136.3
ESTIMATED PEAK FLOW          (CUMECS) =                12.
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK S14.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 6.539
ESTIMATED PEAK FLOW          (CUMECS) =                0.64
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK S14.1              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 17.22
ESTIMATED PEAK FLOW          (CUMECS) =                1.6
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK D8                 9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1171.
ESTIMATED PEAK FLOW          (CUMECS) =                80.
ESTIMATED TIME TO PEAK          (MINS) =             330.00

LINK S16.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 72.53
ESTIMATED PEAK FLOW          (CUMECS) =                7.0
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK S15.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 26.29
ESTIMATED PEAK FLOW          (CUMECS) =                2.7
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK D9                 9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 1270.
ESTIMATED PEAK FLOW          (CUMECS) =                86.
ESTIMATED TIME TO PEAK          (MINS) =             330.00

LINK S17.0              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 110.7
ESTIMATED PEAK FLOW          (CUMECS) =                10.
ESTIMATED TIME TO PEAK          (MINS) =             300.00

LINK S17.1              9.000

ESTIMATED VOLUME (CU METRES*10**3) =                 148.8
```

```
 ESTIMATED PEAK FLOW          (CUMECS) =                  14.
 ESTIMATED TIME TO PEAK          (MINS) =              300.00

 LINK S18.0              9.000

 ESTIMATED VOLUME (CU METRES*10**3) =                  37.63
 ESTIMATED PEAK FLOW          (CUMECS) =                 3.5
 ESTIMATED TIME TO PEAK          (MINS) =              300.00

 LINK D10                9.000

 ESTIMATED VOLUME (CU METRES*10**3) =                  1456.
 ESTIMATED PEAK FLOW          (CUMECS) =                 99.
 ESTIMATED TIME TO PEAK          (MINS) =              330.00

 LINK S19.0              9.000

 ESTIMATED VOLUME (CU METRES*10**3) =                  44.51
 ESTIMATED PEAK FLOW          (CUMECS) =                 4.3
 ESTIMATED TIME TO PEAK          (MINS) =              300.00

 LINK S20.0              9.000

 ESTIMATED VOLUME (CU METRES*10**3) =                  37.51
 ESTIMATED PEAK FLOW          (CUMECS) =                 3.8
 ESTIMATED TIME TO PEAK          (MINS) =              300.00

 LINK Outlet             9.000

 ESTIMATED VOLUME (CU METRES*10**3) =                  1538.
 ESTIMATED PEAK FLOW          (CUMECS) =                 0.11E+03
 ESTIMATED TIME TO PEAK          (MINS) =              327.00



################################################################################
#####
Existing - 100 year re-run - Hyder Sept 2010

Results for period from  0: 0.0  1/ 1/1990
                     to 16:40.0  1/ 1/1990
################################################################################
#####

                                ROUTING INCREMENT (MINS) =       1.00
                                STORM DURATION (MINS)    =       540.
                                RETURN PERIOD (YRS)      =       100.
                                BX                       =     1.0000
                                TOTAL OF FIRST SUB-AREAS  (ha) =     689.69
                                TOTAL OF SECOND SUB-AREAS (ha) =     386.68
                                TOTAL OF ALL SUB-AREAS (ha)    =    1076.37

     SUMMARY OF CATCHMENT AND RAINFALL DATA
 Link      Catch. Area      Slope    % Impervious     Pern        B        Link
 Label      #1     #2     #1    #2      #1   #2     #1    #2    #1   #2     No.
            (ha)              (%)           (%)
S1.0      189.00  0.000  1.700 0.000  5.000 0.000  .050 0.00  .4083 0.000  1.000

S3.0       6.840  6.840  1.200 1.200  5.000 100.0  .050 .015  .0865 .0037  2.000

D1        .00001  0.000  .0010 0.000  0.000 0.000  .025 0.00  .0021 0.000  1.001

S2.0      28.000  0.000  .3000 0.000  5.000 0.000  .050 0.00  .3594 0.000  3.000

B         17.350  8.701  .5000 .5000  0.000 100.0  .050 .015  .2700 .0065  4.000

B1         1.073  0.000  .5000 0.000  5.000 0.000  .050 0.00  .0511 0.000  5.000
```

S2.1	47.903	2.521	.5000	.5000	0.000	100.0	.050	.015	.4578	.0034	3.001
S4.0	10.150	10.150	.7000	.7000	5.000	100.0	.050	.015	.1389	.0059	6.000
S1.1	29.650	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3703	0.000	7.000
D2	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.002
S5.0	6.430	6.430	1.200	1.200	5.000	100.0	.050	.015	.0837	.0036	8.000
D3	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.003
S1.2	42.887	0.000	.7000	0.000	5.000	0.000	.050	0.00	.2940	0.000	9.000
S7.0	73.180	73.180	.5000	.5000	5.000	100.0	.050	.015	.4591	.0196	10.00
D4	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.004
S9.0	3.960	3.960	1.200	1.200	5.000	100.0	.050	.015	.0651	.0028	11.00
A	13.232	14.221	.7000	.7000	0.000	100.0	.050	.025	.1983	.0142	12.00
S6.0	28.014	1.474	.7000	.7000	0.000	100.0	.050	.025	.2928	.0044	12.00
D5	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.005
S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00
S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00
S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.00
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.00
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.010
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.00
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.00
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.011

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	18.800	20.00	0.000	2.500	0.000	130.07	0.000	19.911	331.0	5.000
S3.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	1.926	300.0	5.000
D1	18.800	20.00	0.000	2.500	0.000	130.07	0.000	21.589	335.0	5.000
S2.0	18.800	20.00	0.000	2.500	0.000	130.07	0.000	2.310	351.0	13.00
B	18.800	20.00	1.500	2.500	0.000	130.07	167.70	2.662	300.0	0.000
B1	18.800	20.00	0.000	2.500	0.000	130.07	0.000	0.1352	317.0	0.000
S2.1	18.800	20.00	1.500	2.500	0.000	130.07	167.70	8.713	330.0	0.000
S4.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	2.645	300.0	0.000
S1.1	18.800	20.00	0.000	2.500	0.000	130.07	0.000	2.421	355.0	0.000
D2	18.800	20.00	0.000	2.500	0.000	130.07	0.000	33.937	340.0	7.000
S5.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	1.815	300.0	0.000
D3	18.800	20.00	0.000	2.500	0.000	130.07	0.000	34.989	337.0	3.000
S1.2	18.800	20.00	0.000	2.500	0.000	130.07	0.000	4.210	331.0	0.000
S7.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	16.841	300.0	1.000
D4	18.800	20.00	0.000	2.500	0.000	130.07	0.000	52.795	331.0	1.500
S9.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	1.157	300.0	0.000
A	18.800	20.00	1.500	2.500	0.000	130.07	167.70	3.433	300.0	0.000
S6.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	5.858	330.0	0.000
D5	18.800	20.00	0.000	2.500	0.000	130.07	0.000	58.958	333.0	1.500
S10.0	18.800	20.00	0.000	2.500	0.000	130.07	0.000	1.412	331.0	0.000
S8.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	5.322	300.0	0.000
S8.1	18.800	20.00	1.500	2.500	0.000	130.07	167.70	6.613	300.0	9.000
D6	18.800	20.00	0.000	2.500	0.000	130.07	0.000	66.309	335.0	6.000
S12.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	3.612	300.0	0.000
S11.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	2.046	300.0	0.000
D7	18.800	20.00	0.000	2.500	0.000	130.07	0.000	69.927	341.0	2.500
S13.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	11.923	300.0	0.000
S14.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	0.6380	300.0	0.000
S14.1	18.800	20.00	1.500	2.500	0.000	130.07	167.70	1.571	300.0	9.000
D8	18.800	20.00	0.000	2.500	0.000	130.07	0.000	79.560	330.0	2.500
S16.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	7.029	300.0	0.000
S15.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	2.673	300.0	0.000
D9	18.800	20.00	0.000	2.500	0.000	130.07	0.000	85.798	330.0	5.000

S17.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	10.101	300.0	0.000
S17.1	18.800	20.00	1.500	2.500	0.000	130.07	167.70	13.796	300.0	0.000
S18.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	3.481	300.0	0.000
D10	18.800	20.00	0.000	2.500	0.000	130.07	0.000	99.065	330.0	4.300
S19.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	4.324	300.0	0.000
S20.0	18.800	20.00	1.500	2.500	0.000	130.07	167.70	3.763	300.0	0.000
Outlet	18.800	20.00	0.000	2.500	0.000	130.07	0.000	105.65	327.0	0.000

```
 LINK S1.0             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                271.3
 ESTIMATED PEAK FLOW         (CUMECS) =                 18.
 ESTIMATED TIME TO PEAK         (MINS) =              421.00

 LINK S3.0             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                22.60
 ESTIMATED PEAK FLOW         (CUMECS) =                  2.0
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK D1               10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                293.9
 ESTIMATED PEAK FLOW         (CUMECS) =                 20.
 ESTIMATED TIME TO PEAK         (MINS) =              425.00

 LINK S2.0             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                40.18
 ESTIMATED PEAK FLOW         (CUMECS) =                  2.0
 ESTIMATED TIME TO PEAK         (MINS) =              421.00

 LINK B                10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                41.16
 ESTIMATED PEAK FLOW         (CUMECS) =                  2.8
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK B1               10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                1.540
 ESTIMATED PEAK FLOW         (CUMECS) =                 0.14
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S2.1             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                156.3
 ESTIMATED PEAK FLOW         (CUMECS) =                  8.0
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S4.0             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                33.54
 ESTIMATED PEAK FLOW         (CUMECS) =                  2.8
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S1.1             10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                42.54
 ESTIMATED PEAK FLOW         (CUMECS) =                  2.1
 ESTIMATED TIME TO PEAK         (MINS) =              423.00
```

```
LINK D2                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 526.3
ESTIMATED PEAK FLOW          (CUMECS) =                  30.
ESTIMATED TIME TO PEAK          (MINS) =              430.00

LINK S5.0              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 21.24
ESTIMATED PEAK FLOW          (CUMECS) =                 1.9
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D3                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 547.5
ESTIMATED PEAK FLOW          (CUMECS) =                  31.
ESTIMATED TIME TO PEAK          (MINS) =              437.00

LINK S1.2              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 61.56
ESTIMATED PEAK FLOW          (CUMECS) =                 3.8
ESTIMATED TIME TO PEAK          (MINS) =              421.00

LINK S7.0              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 241.8
ESTIMATED PEAK FLOW          (CUMECS) =                  17.
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D4                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 850.9
ESTIMATED PEAK FLOW          (CUMECS) =                  50.
ESTIMATED TIME TO PEAK          (MINS) =              421.00

LINK S9.0              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 13.08
ESTIMATED PEAK FLOW          (CUMECS) =                 1.2
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK A                 10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 45.57
ESTIMATED PEAK FLOW          (CUMECS) =                 3.6
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S6.0              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 88.55
ESTIMATED PEAK FLOW          (CUMECS) =                 6.1
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D5                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 952.5
ESTIMATED PEAK FLOW          (CUMECS) =                  56.
ESTIMATED TIME TO PEAK          (MINS) =              421.00

LINK S10.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 18.50
ESTIMATED PEAK FLOW          (CUMECS) =                 1.3
ESTIMATED TIME TO PEAK          (MINS) =              421.00

LINK S8.0              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                 73.87
ESTIMATED PEAK FLOW          (CUMECS) =                 5.5
```

```
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S8.1              10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  90.73
ESTIMATED PEAK FLOW           (CUMECS) =                6.9
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D6                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  1062.
ESTIMATED PEAK FLOW           (CUMECS) =                64.
ESTIMATED TIME TO PEAK          (MINS) =              425.00

LINK S12.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  47.42
ESTIMATED PEAK FLOW           (CUMECS) =                3.8
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S11.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  24.35
ESTIMATED PEAK FLOW           (CUMECS) =                2.2
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D7                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  1134.
ESTIMATED PEAK FLOW           (CUMECS) =                67.
ESTIMATED TIME TO PEAK          (MINS) =              429.00

LINK S13.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  151.5
ESTIMATED PEAK FLOW           (CUMECS) =                13.
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S14.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  7.281
ESTIMATED PEAK FLOW           (CUMECS) =                0.64
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S14.1             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  19.14
ESTIMATED PEAK FLOW           (CUMECS) =                1.6
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D8                10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  1304.
ESTIMATED PEAK FLOW           (CUMECS) =                76.
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S16.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  80.78
ESTIMATED PEAK FLOW           (CUMECS) =                7.1
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK S15.0             10.000

ESTIMATED VOLUME (CU METRES*10**3) =                  29.14
ESTIMATED PEAK FLOW           (CUMECS) =                2.8
ESTIMATED TIME TO PEAK          (MINS) =              420.00

LINK D9                10.000
```

```
 ESTIMATED VOLUME (CU METRES*10**3) =                1414.
 ESTIMATED PEAK FLOW         (CUMECS) =                  85.
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S17.0            10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 123.2
 ESTIMATED PEAK FLOW         (CUMECS) =                  10.
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S17.1            10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 165.6
 ESTIMATED PEAK FLOW         (CUMECS) =                  14.
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S18.0            10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 41.70
 ESTIMATED PEAK FLOW         (CUMECS) =                   3.7
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK D10              10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 1621.
 ESTIMATED PEAK FLOW         (CUMECS) =                  97.
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S19.0            10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 49.57
 ESTIMATED PEAK FLOW         (CUMECS) =                   4.4
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK S20.0            10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 41.55
 ESTIMATED PEAK FLOW         (CUMECS) =                   3.9
 ESTIMATED TIME TO PEAK         (MINS) =              420.00

 LINK Outlet           10.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 1712.
 ESTIMATED PEAK FLOW         (CUMECS) =                0.10E+03
 ESTIMATED TIME TO PEAK         (MINS) =              424.00



################################################################################
#####
Existing - 100 year re-run - Hyder Sept 2010

Results for period from  0: 0.0  1/ 1/1990
                    to  2: 0.0  3/ 1/1990
################################################################################
#####


                              ROUTING INCREMENT (MINS) =       1.00
                              STORM DURATION (MINS)    =       720.
                              RETURN PERIOD (YRS)      =       100.
                              BX                       =     1.0000
                              TOTAL OF FIRST SUB-AREAS  (ha) =     689.69
                              TOTAL OF SECOND SUB-AREAS (ha) =     386.68
                              TOTAL OF ALL SUB-AREAS (ha)    =    1076.37


    SUMMARY OF CATCHMENT AND RAINFALL DATA
 Link      Catch. Area      Slope    % Impervious     Pern        B       Link
```

Label	#1 (ha)	#2	#1 (%)	#2	#1 (%)	#2	#1	#2	#1	#2	No.
S1.0	189.00	0.000	1.700	0.000	5.000	0.000	.050	0.00	.4083	0.000	1.000
S3.0	6.840	6.840	1.200	1.200	5.000	100.0	.050	.015	.0865	.0037	2.000
D1	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.001
S2.0	28.000	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3594	0.000	3.000
B	17.350	8.701	.5000	.5000	0.000	100.0	.050	.015	.2700	.0065	4.000
B1	1.073	0.000	.5000	0.000	5.000	0.000	.050	0.00	.0511	0.000	5.000
S2.1	47.903	2.521	.5000	.5000	0.000	100.0	.050	.015	.4578	.0034	3.001
S4.0	10.150	10.150	.7000	.7000	5.000	100.0	.050	.015	.1389	.0059	6.000
S1.1	29.650	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3703	0.000	7.000
D2	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.002
S5.0	6.430	6.430	1.200	1.200	5.000	100.0	.050	.015	.0837	.0036	8.000
D3	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.003
S1.2	42.887	0.000	.7000	0.000	5.000	0.000	.050	0.00	.2940	0.000	9.000
S7.0	73.180	73.180	.5000	.5000	5.000	100.0	.050	.015	.4591	.0196	10.00
D4	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.004
S9.0	3.960	3.960	1.200	1.200	5.000	100.0	.050	.015	.0651	.0028	11.00
A	13.232	14.221	.7000	.7000	0.000	100.0	.050	.025	.1983	.0142	12.00
S6.0	28.014	1.474	.7000	.7000	0.000	100.0	.050	.025	.2928	.0044	12.00
D5	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.005
S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00
S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00

S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.(
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.(
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.0
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.(
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.(
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.0

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	15.700	20.00	0.000	2.500	0.000	143.61	0.000	18.152	421.0	5.000
S3.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	2.023	420.0	5.000
D1	15.700	20.00	0.000	2.500	0.000	143.61	0.000	20.082	425.0	5.000
S2.0	15.700	20.00	0.000	2.500	0.000	143.61	0.000	2.001	421.0	13.00
B	15.700	20.00	1.500	2.500	0.000	143.61	186.90	2.790	420.0	0.000
B1	15.700	20.00	0.000	2.500	0.000	143.61	0.000	0.1403	420.0	0.000
S2.1	15.700	20.00	1.500	2.500	0.000	143.61	186.90	7.951	420.0	0.000
S4.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	2.792	420.0	0.000
S1.1	15.700	20.00	0.000	2.500	0.000	143.61	0.000	2.083	423.0	0.000
D2	15.700	20.00	0.000	2.500	0.000	143.61	0.000	30.397	430.0	7.000
S5.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	1.905	420.0	0.000
D3	15.700	20.00	0.000	2.500	0.000	143.61	0.000	31.276	437.0	3.000
S1.2	15.700	20.00	0.000	2.500	0.000	143.61	0.000	3.761	421.0	0.000
S7.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	17.336	420.0	1.000
D4	15.700	20.00	0.000	2.500	0.000	143.61	0.000	49.607	421.0	1.500
S9.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	1.196	420.0	0.000
A	15.700	20.00	1.500	2.500	0.000	143.61	186.90	3.565	420.0	0.000
S6.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	6.107	420.0	0.000
D5	15.700	20.00	0.000	2.500	0.000	143.61	0.000	55.527	421.0	1.500
S10.0	15.700	20.00	0.000	2.500	0.000	143.61	0.000	1.306	421.0	0.000
S8.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	5.529	420.0	0.000
S8.1	15.700	20.00	1.500	2.500	0.000	143.61	186.90	6.901	420.0	9.000
D6	15.700	20.00	0.000	2.500	0.000	143.61	0.000	63.523	425.0	6.000
S12.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	3.798	420.0	0.000
S11.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	2.159	420.0	0.000
D7	15.700	20.00	0.000	2.500	0.000	143.61	0.000	66.532	429.0	2.500
S13.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	12.697	420.0	0.000

S14.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	0.6439	420.0	0.000
S14.1	15.700	20.00	1.500	2.500	0.000	143.61	186.90	1.639	420.0	9.000
D8	15.700	20.00	0.000	2.500	0.000	143.61	0.000	76.480	420.0	2.500
S16.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	7.105	420.0	0.000
S15.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	2.766	420.0	0.000
D9	15.700	20.00	0.000	2.500	0.000	143.61	0.000	84.523	420.0	5.000
S17.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	10.391	420.0	0.000
S17.1	15.700	20.00	1.500	2.500	0.000	143.61	186.90	14.119	420.0	0.000
S18.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	3.729	420.0	0.000
D10	15.700	20.00	0.000	2.500	0.000	143.61	0.000	97.392	420.0	4.300
S19.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	4.365	420.0	0.000
S20.0	15.700	20.00	1.500	2.500	0.000	143.61	186.90	3.919	420.0	0.000
Outlet	15.700	20.00	0.000	2.500	0.000	143.61	0.000	101.92	424.0	0.000

Run completed at: 6th September 2010 10:21:53

```
 Run started at:  6th  September  2010  10:33:42


################################################################################
#####
                          RUNTIME          RESULTS
################################################################################
#####

Max. no. of links allowed =       1500

Max. no. of routng increments allowed =     250000

Max. no. of rating curve points =     250000

Max. no. of storm temporal points =     250000

Max. no. of channel subreaches =         25

Max link stack level =         50

Input Version number =          800

 LINK S1.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 307.6
 ESTIMATED PEAK FLOW         (CUMECS) =                  25.
 ESTIMATED TIME TO PEAK         (MINS) =               331.00

 LINK S3.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 24.94
 ESTIMATED PEAK FLOW         (CUMECS) =                   2.4
 ESTIMATED TIME TO PEAK         (MINS) =               300.00

 LINK D1                1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 332.6
 ESTIMATED PEAK FLOW         (CUMECS) =                  27.
 ESTIMATED TIME TO PEAK         (MINS) =               335.00

 LINK S2.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 45.05
 ESTIMATED PEAK FLOW         (CUMECS) =                   2.9
 ESTIMATED TIME TO PEAK         (MINS) =               345.00

 LINK B                 1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 45.60
 ESTIMATED PEAK FLOW         (CUMECS) =                   3.3
 ESTIMATED TIME TO PEAK         (MINS) =               300.00

 LINK B1                1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 1.752
 ESTIMATED PEAK FLOW         (CUMECS) =                  0.17
 ESTIMATED TIME TO PEAK         (MINS) =               318.00

 LINK S2.1              1.000
```

```
ESTIMATED VOLUME (CU METRES*10**3) =                174.4
ESTIMATED PEAK FLOW         (CUMECS) =                 11.
ESTIMATED TIME TO PEAK         (MINS) =             330.00

LINK S4.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                36.99
ESTIMATED PEAK FLOW         (CUMECS) =                  3.2
ESTIMATED TIME TO PEAK         (MINS) =             300.00

LINK S1.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                47.74
ESTIMATED PEAK FLOW         (CUMECS) =                  3.0
ESTIMATED TIME TO PEAK         (MINS) =             347.00

LINK D2                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                591.7
ESTIMATED PEAK FLOW         (CUMECS) =                 42.
ESTIMATED TIME TO PEAK         (MINS) =             330.00

LINK S5.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                23.45
ESTIMATED PEAK FLOW         (CUMECS) =                  2.2
ESTIMATED TIME TO PEAK         (MINS) =             300.00

LINK D3                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                615.1
ESTIMATED PEAK FLOW         (CUMECS) =                 44.
ESTIMATED TIME TO PEAK         (MINS) =             337.00

LINK S1.2              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                69.65
ESTIMATED PEAK FLOW         (CUMECS) =                  5.3
ESTIMATED TIME TO PEAK         (MINS) =             331.00

LINK S7.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                265.6
ESTIMATED PEAK FLOW         (CUMECS) =                 21.
ESTIMATED TIME TO PEAK         (MINS) =             300.00

LINK D4                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                950.3
ESTIMATED PEAK FLOW         (CUMECS) =                 66.
ESTIMATED TIME TO PEAK         (MINS) =             331.00

LINK S9.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                14.44
ESTIMATED PEAK FLOW         (CUMECS) =                  1.4
ESTIMATED TIME TO PEAK         (MINS) =             300.00

LINK A                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                50.16
ESTIMATED PEAK FLOW         (CUMECS) =                  4.2
ESTIMATED TIME TO PEAK         (MINS) =             300.00

LINK S6.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                98.53
ESTIMATED PEAK FLOW         (CUMECS) =                  7.2
ESTIMATED TIME TO PEAK         (MINS) =             330.00
```

```
LINK D5                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1063.
ESTIMATED PEAK FLOW          (CUMECS) =                73.
ESTIMATED TIME TO PEAK          (MINS) =              333.00

LINK S10.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                20.98
ESTIMATED PEAK FLOW          (CUMECS) =                 1.8
ESTIMATED TIME TO PEAK          (MINS) =              330.00

LINK S8.0               1.000

ESTIMATED VOLUME (CU METRES*10**3) =                81.28
ESTIMATED PEAK FLOW          (CUMECS) =                 6.5
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S8.1               1.000

ESTIMATED VOLUME (CU METRES*10**3) =                99.88
ESTIMATED PEAK FLOW          (CUMECS) =                 8.1
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D6                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1184.
ESTIMATED PEAK FLOW          (CUMECS) =                82.
ESTIMATED TIME TO PEAK          (MINS) =              335.00

LINK S12.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                52.28
ESTIMATED PEAK FLOW          (CUMECS) =                 4.4
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S11.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                26.87
ESTIMATED PEAK FLOW          (CUMECS) =                 2.5
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D7                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1263.
ESTIMATED PEAK FLOW          (CUMECS) =                87.
ESTIMATED TIME TO PEAK          (MINS) =              339.00

LINK S13.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                167.1
ESTIMATED PEAK FLOW          (CUMECS) =                15.
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S14.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                7.886
ESTIMATED PEAK FLOW          (CUMECS) =                0.77
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S14.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                20.98
ESTIMATED PEAK FLOW          (CUMECS) =                 1.9
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D8                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1451.
ESTIMATED PEAK FLOW          (CUMECS) =                99.
```

```
ESTIMATED TIME TO PEAK          (MINS) =              330.00

LINK S16.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                87.47
ESTIMATED PEAK FLOW          (CUMECS) =                 8.5
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S15.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                32.40
ESTIMATED PEAK FLOW          (CUMECS) =                 3.3
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D9                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1571.
ESTIMATED PEAK FLOW          (CUMECS) =              0.11E+03
ESTIMATED TIME TO PEAK          (MINS) =              330.00

LINK S17.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                134.6
ESTIMATED PEAK FLOW          (CUMECS) =                  12.
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S17.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                180.5
ESTIMATED PEAK FLOW          (CUMECS) =                  17.
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S18.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                46.57
ESTIMATED PEAK FLOW          (CUMECS) =                 4.3
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK D10                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1798.
ESTIMATED PEAK FLOW          (CUMECS) =              0.12E+03
ESTIMATED TIME TO PEAK          (MINS) =              330.00

LINK S19.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                53.68
ESTIMATED PEAK FLOW          (CUMECS) =                 5.2
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK S20.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                46.35
ESTIMATED PEAK FLOW          (CUMECS) =                 4.6
ESTIMATED TIME TO PEAK          (MINS) =              300.00

LINK Outlet             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1898.
ESTIMATED PEAK FLOW          (CUMECS) =              0.13E+03
ESTIMATED TIME TO PEAK          (MINS) =              327.00
```

```
################################################################################
#####
Existing - 100 year re-run - Hyder Sept 2010

Results for period from  0: 0.0  1/ 1/1990
                     to 16:40.0  1/ 1/1990
################################################################################
#####
```

ROUTING INCREMENT (MINS) = 1.00
STORM DURATION (MINS) = 540.
RETURN PERIOD (YRS) = 100.
BX = 1.0000
TOTAL OF FIRST SUB-AREAS (ha) = 689.69
TOTAL OF SECOND SUB-AREAS (ha) = 386.68
TOTAL OF ALL SUB-AREAS (ha) = 1076.37

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link Label	Catch. Area #1 (ha)	Catch. Area #2 (ha)	Slope #1 (%)	Slope #2 (%)	% Impervious #1 (%)	% Impervious #2 (%)	Pern #1	Pern #2	B #1	B #2	Link No.
S1.0	189.00	0.000	1.700	0.000	5.000	0.000	.050	0.00	.4083	0.000	1.000
S3.0	6.840	6.840	1.200	1.200	5.000	100.0	.050	.015	.0865	.0037	2.000
D1	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.001
S2.0	28.000	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3594	0.000	3.000
B	17.350	8.701	.5000	.5000	0.000	100.0	.050	.015	.2700	.0065	4.000
B1	1.073	0.000	.5000	0.000	5.000	0.000	.050	0.00	.0511	0.000	5.000
S2.1	47.903	2.521	.5000	.5000	0.000	100.0	.050	.015	.4578	.0034	3.001
S4.0	10.150	10.150	.7000	.7000	5.000	100.0	.050	.015	.1389	.0059	6.000
S1.1	29.650	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3703	0.000	7.000
D2	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.002
S5.0	6.430	6.430	1.200	1.200	5.000	100.0	.050	.015	.0837	.0036	8.000
D3	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.003
S1.2	42.887	0.000	.7000	0.000	5.000	0.000	.050	0.00	.2940	0.000	9.000
S7.0	73.180	73.180	.5000	.5000	5.000	100.0	.050	.015	.4591	.0196	10.00
D4	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.004
S9.0	3.960	3.960	1.200	1.200	5.000	100.0	.050	.015	.0651	.0028	11.00
A	13.232	14.221	.7000	.7000	0.000	100.0	.050	.025	.1983	.0142	12.00
S6.0	28.014	1.474	.7000	.7000	0.000	100.0	.050	.025	.2928	.0044	12.00
D5	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.005
S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00

S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00
S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.00
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.00
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.010
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.00
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.00
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.011

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	22.560	20.00	0.000	2.500	0.000	163.33	0.000	24.609	331.0	5.000
S3.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	2.362	300.0	5.000
D1	22.560	20.00	0.000	2.500	0.000	163.33	0.000	26.633	335.0	5.000
S2.0	22.560	20.00	0.000	2.500	0.000	163.33	0.000	2.883	345.0	13.00
B	22.560	20.00	1.500	2.500	0.000	163.33	201.54	3.283	300.0	0.000
B1	22.560	20.00	0.000	2.500	0.000	163.33	0.000	0.1666	318.0	0.000
S2.1	22.560	20.00	1.500	2.500	0.000	163.33	201.54	11.087	330.0	0.000
S4.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	3.214	300.0	0.000
S1.1	22.560	20.00	0.000	2.500	0.000	163.33	0.000	3.025	347.0	0.000
D2	22.560	20.00	0.000	2.500	0.000	163.33	0.000	42.326	330.0	7.000
S5.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	2.225	300.0	0.000
D3	22.560	20.00	0.000	2.500	0.000	163.33	0.000	43.677	337.0	3.000
S1.2	22.560	20.00	0.000	2.500	0.000	163.33	0.000	5.306	331.0	0.000
S7.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	20.673	300.0	1.000
D4	22.560	20.00	0.000	2.500	0.000	163.33	0.000	65.901	331.0	1.500
S9.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	1.402	300.0	0.000

A	22.560	20.00	1.500	2.500	0.000	163.33	201.54	4.164	300.0	0.000
S6.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	7.224	330.0	0.000
D5	22.560	20.00	0.000	2.500	0.000	163.33	0.000	73.455	333.0	1.500
S10.0	22.560	20.00	0.000	2.500	0.000	163.33	0.000	1.764	330.0	0.000
S8.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	6.531	300.0	0.000
S8.1	22.560	20.00	1.500	2.500	0.000	163.33	201.54	8.113	300.0	9.000
D6	22.560	20.00	0.000	2.500	0.000	163.33	0.000	82.434	335.0	6.000
S12.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	4.398	300.0	0.000
S11.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	2.505	300.0	0.000
D7	22.560	20.00	0.000	2.500	0.000	163.33	0.000	86.839	339.0	2.500
S13.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	14.594	300.0	0.000
S14.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	0.7688	300.0	0.000
S14.1	22.560	20.00	1.500	2.500	0.000	163.33	201.54	1.919	300.0	9.000
D8	22.560	20.00	0.000	2.500	0.000	163.33	0.000	98.742	330.0	2.500
S16.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	8.467	300.0	0.000
S15.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	3.289	300.0	0.000
D9	22.560	20.00	0.000	2.500	0.000	163.33	0.000	106.12	330.0	5.000
S17.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	12.188	300.0	0.000
S17.1	22.560	20.00	1.500	2.500	0.000	163.33	201.54	16.632	300.0	0.000
S18.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	4.255	300.0	0.000
D10	22.560	20.00	0.000	2.500	0.000	163.33	0.000	121.95	330.0	4.300
S19.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	5.206	300.0	0.000
S20.0	22.560	20.00	1.500	2.500	0.000	163.33	201.54	4.590	300.0	0.000
Outlet	22.560	20.00	0.000	2.500	0.000	163.33	0.000	129.92	327.0	0.000

Run completed at: 6th September 2010 10:33:45

```
 Run started at:  6th  September  2010  10:38:46


################################################################################
#####
                          RUNTIME          RESULTS
################################################################################
#####

Max. no. of links allowed =       1500

Max. no. of routng increments allowed =     250000

Max. no. of rating curve points =     250000

Max. no. of storm temporal points =     250000

Max. no. of channel subreaches =         25

Max link stack level =         50

Input Version number =          800

 LINK S1.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 619.5
 ESTIMATED PEAK FLOW         (CUMECS) =                0.15E+03
 ESTIMATED TIME TO PEAK         (MINS) =               51.00

 LINK S3.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 44.93
 ESTIMATED PEAK FLOW         (CUMECS) =                 15.
 ESTIMATED TIME TO PEAK         (MINS) =               27.00

 LINK D1                1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 664.5
 ESTIMATED PEAK FLOW         (CUMECS) =                0.16E+03
 ESTIMATED TIME TO PEAK         (MINS) =               56.00

 LINK S2.0              1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 90.96
 ESTIMATED PEAK FLOW         (CUMECS) =                 14.
 ESTIMATED TIME TO PEAK         (MINS) =               60.00

 LINK B                 1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 85.17
 ESTIMATED PEAK FLOW         (CUMECS) =                 17.
 ESTIMATED TIME TO PEAK         (MINS) =               42.00

 LINK B1                1.000

 ESTIMATED VOLUME (CU METRES*10**3) =                 3.540
 ESTIMATED PEAK FLOW         (CUMECS) =                 1.1
 ESTIMATED TIME TO PEAK         (MINS) =               36.00

 LINK S2.1              1.000
```

```
ESTIMATED VOLUME (CU METRES*10**3) =                343.4
ESTIMATED PEAK FLOW          (CUMECS) =                 50.
ESTIMATED TIME TO PEAK          (MINS) =              57.00

LINK S4.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                66.59
ESTIMATED PEAK FLOW          (CUMECS) =                 19.
ESTIMATED TIME TO PEAK          (MINS) =              27.00

LINK S1.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                96.46
ESTIMATED PEAK FLOW          (CUMECS) =                 15.
ESTIMATED TIME TO PEAK          (MINS) =              60.00

LINK D2                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1171.
ESTIMATED PEAK FLOW          (CUMECS) =              0.23E+03
ESTIMATED TIME TO PEAK          (MINS) =              57.00

LINK S5.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                42.22
ESTIMATED PEAK FLOW          (CUMECS) =                 15.
ESTIMATED TIME TO PEAK          (MINS) =              27.00

LINK D3                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1213.
ESTIMATED PEAK FLOW          (CUMECS) =              0.24E+03
ESTIMATED TIME TO PEAK          (MINS) =              64.00

LINK S1.2              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                140.6
ESTIMATED PEAK FLOW          (CUMECS) =                 31.
ESTIMATED TIME TO PEAK          (MINS) =              53.00

LINK S7.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                478.7
ESTIMATED PEAK FLOW          (CUMECS) =              0.11E+03
ESTIMATED TIME TO PEAK          (MINS) =              27.00

LINK D4                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                1832.
ESTIMATED PEAK FLOW          (CUMECS) =              0.32E+03
ESTIMATED TIME TO PEAK          (MINS) =              60.00

LINK S9.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                26.02
ESTIMATED PEAK FLOW          (CUMECS) =                 9.3
ESTIMATED TIME TO PEAK          (MINS) =              27.00

LINK A                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =                90.04
ESTIMATED PEAK FLOW          (CUMECS) =                 23.
ESTIMATED TIME TO PEAK          (MINS) =              27.00

LINK S6.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                186.7
ESTIMATED PEAK FLOW          (CUMECS) =                 44.
ESTIMATED TIME TO PEAK          (MINS) =              43.00
```

```
LINK D5                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                2045.
ESTIMATED PEAK FLOW         (CUMECS) =                0.36E+03
ESTIMATED TIME TO PEAK         (MINS) =               55.00

LINK S10.0             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                42.24
ESTIMATED PEAK FLOW         (CUMECS) =                  11.
ESTIMATED TIME TO PEAK         (MINS) =               47.00

LINK S8.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                146.5
ESTIMATED PEAK FLOW         (CUMECS) =                  35.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK S8.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =                180.0
ESTIMATED PEAK FLOW         (CUMECS) =                  45.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK D6                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                2267.
ESTIMATED PEAK FLOW         (CUMECS) =                0.40E+03
ESTIMATED TIME TO PEAK         (MINS) =               57.00

LINK S12.0             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                94.19
ESTIMATED PEAK FLOW         (CUMECS) =                  26.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK S11.0             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                48.40
ESTIMATED PEAK FLOW         (CUMECS) =                  16.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK D7                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                2409.
ESTIMATED PEAK FLOW         (CUMECS) =                0.42E+03
ESTIMATED TIME TO PEAK         (MINS) =               57.00

LINK S13.0             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                301.1
ESTIMATED PEAK FLOW         (CUMECS) =                  89.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK S14.0             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                13.10
ESTIMATED PEAK FLOW         (CUMECS) =                  5.4
ESTIMATED TIME TO PEAK         (MINS) =                9.00

LINK S14.1             1.000

ESTIMATED VOLUME (CU METRES*10**3) =                36.72
ESTIMATED PEAK FLOW         (CUMECS) =                  12.
ESTIMATED TIME TO PEAK         (MINS) =               27.00

LINK D8                1.000

ESTIMATED VOLUME (CU METRES*10**3) =                2747.
ESTIMATED PEAK FLOW         (CUMECS) =                0.48E+03
```

```
ESTIMATED TIME TO PEAK          (MINS) =              57.00

LINK S16.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              145.3
ESTIMATED PEAK FLOW          (CUMECS) =               58.
ESTIMATED TIME TO PEAK          (MINS) =             9.00

LINK S15.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              60.05
ESTIMATED PEAK FLOW          (CUMECS) =               22.
ESTIMATED TIME TO PEAK          (MINS) =             27.00

LINK D9                 1.000

ESTIMATED VOLUME (CU METRES*10**3) =              2952.
ESTIMATED PEAK FLOW          (CUMECS) =             0.50E+03
ESTIMATED TIME TO PEAK          (MINS) =             59.00

LINK S17.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              232.8
ESTIMATED PEAK FLOW          (CUMECS) =               74.
ESTIMATED TIME TO PEAK          (MINS) =             27.00

LINK S17.1              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              309.1
ESTIMATED PEAK FLOW          (CUMECS) =             0.10E+03
ESTIMATED TIME TO PEAK          (MINS) =             9.00

LINK S18.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              88.04
ESTIMATED PEAK FLOW          (CUMECS) =               29.
ESTIMATED TIME TO PEAK          (MINS) =             33.00

LINK D10                1.000

ESTIMATED VOLUME (CU METRES*10**3) =              3349.
ESTIMATED PEAK FLOW          (CUMECS) =             0.57E+03
ESTIMATED TIME TO PEAK          (MINS) =             50.00

LINK S19.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              89.17
ESTIMATED PEAK FLOW          (CUMECS) =               36.
ESTIMATED TIME TO PEAK          (MINS) =             9.00

LINK S20.0              1.000

ESTIMATED VOLUME (CU METRES*10**3) =              86.89
ESTIMATED PEAK FLOW          (CUMECS) =               31.
ESTIMATED TIME TO PEAK          (MINS) =             27.00

LINK Outlet             1.000

ESTIMATED VOLUME (CU METRES*10**3) =              3525.
ESTIMATED PEAK FLOW          (CUMECS) =             0.60E+03
ESTIMATED TIME TO PEAK          (MINS) =             45.00
```

```
################################################################################
#####
PMF

Results for period from  0: 0.0  1/ 1/1990
                     to  8:20.0  1/ 1/1990
################################################################################
#####
```

ROUTING INCREMENT (MINS) = 1.00
STORM DURATION (MINS) = 60.
RETURN PERIOD (YRS) = 100000.
BX = 1.0000
TOTAL OF FIRST SUB-AREAS (ha) = 689.69
TOTAL OF SECOND SUB-AREAS (ha) = 386.68
TOTAL OF ALL SUB-AREAS (ha) = 1076.37

SUMMARY OF CATCHMENT AND RAINFALL DATA

Link Label	Catch. Area #1 (ha)	Catch. Area #2 (ha)	Slope #1 (%)	Slope #2 (%)	% Impervious #1 (%)	% Impervious #2 (%)	Perm #1	Perm #2	B #1	B #2	Link No.
S1.0	189.00	0.000	1.700	0.000	5.000	0.000	.050	0.00	.4083	0.000	1.000
S3.0	6.840	6.840	1.200	1.200	5.000	100.0	.050	.015	.0865	.0037	2.000
D1	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.001
S2.0	28.000	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3594	0.000	3.000
B	17.350	8.701	.5000	.5000	0.000	100.0	.050	.015	.2700	.0065	4.000
B1	1.073	0.000	.5000	0.000	5.000	0.000	.050	0.00	.0511	0.000	5.000
S2.1	47.903	2.521	.5000	.5000	0.000	100.0	.050	.015	.4578	.0034	3.001
S4.0	10.150	10.150	.7000	.7000	5.000	100.0	.050	.015	.1389	.0059	6.000
S1.1	29.650	0.000	.3000	0.000	5.000	0.000	.050	0.00	.3703	0.000	7.000
D2	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.002
S5.0	6.430	6.430	1.200	1.200	5.000	100.0	.050	.015	.0837	.0036	8.000
D3	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.003
S1.2	42.887	0.000	.7000	0.000	5.000	0.000	.050	0.00	.2940	0.000	9.000
S7.0	73.180	73.180	.5000	.5000	5.000	100.0	.050	.015	.4591	.0196	10.00
D4	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.004
S9.0	3.960	3.960	1.200	1.200	5.000	100.0	.050	.015	.0651	.0028	11.00
A	13.232	14.221	.7000	.7000	0.000	100.0	.050	.025	.1983	.0142	12.00
S6.0	28.014	1.474	.7000	.7000	5.000	100.0	.050	.025	.2356	.0044	12.00
D5	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.005
S10.0	12.890	0.000	.6000	0.000	5.000	0.000	.050	0.00	.1699	0.000	13.00
S8.0	22.360	22.360	.4000	.4000	5.000	100.0	.050	.015	.2770	.0118	14.00
S8.1	5.100	5.110	.4000	.4000	5.000	100.0	.050	.015	.1284	.0055	14.00
D6	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.006
S12.0	14.350	14.350	.6000	.6000	5.000	100.0	.050	.015	.1797	.0077	15.00

S11.0	7.370	7.370	1.100	1.100	5.000	100.0	.050	.015	.0939	.0040	16.00
D7	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.007
S13.0	45.840	45.840	1.500	1.500	5.000	100.0	.050	.015	.2080	.0089	17.00
S14.0	0.4000	3.590	.4000	.4000	5.000	100.0	.050	.015	.0342	.0046	18.00
S14.1	3.590	3.590	.5000	.5000	5.000	100.0	.050	.025	.0957	.0082	18.00
D8	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.008
S16.0	4.430	39.830	.6000	.6000	5.000	100.0	.050	.015	.0975	.0131	19.00
S15.0	11.550	6.720	2.700	2.700	5.000	100.0	.050	.015	.0758	.0024	20.00
D9	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.009
S17.0	21.600	49.340	.8000	.8000	5.000	100.0	.050	.015	.1925	.0126	21.00
S17.1	2.320	20.920	.5000	.5000	5.000	100.0	.050	.015	.0763	.0102	21.00
S18.0	19.320	7.470	1.900	1.900	5.000	100.0	.050	.015	.1180	.0031	22.00
D10	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.010
S19.0	2.720	24.440	.6000	.6000	5.000	100.0	.050	.015	.0757	.0101	23.00
S20.0	18.180	8.270	3.000	3.000	5.000	100.0	.050	.015	.0910	.0026	24.00
Outlet	.00001	0.000	.0010	0.000	0.000	0.000	.025	0.00	.0021	0.000	1.011

Link Label	Average Intensity (mm/h)	Init. Loss #1 (mm)	Init. Loss #2 (mm)	Cont. Loss #1 (mm/h)	Cont. Loss #2 (mm/h)	Excess Rain #1 (mm)	Excess Rain #2 (mm)	Peak Inflow (m^3/s)	Time to Peak	Link Lag mins
S1.0	330.00	0.000	0.000	1.000	0.000	329.00	0.000	148.78	51.00	5.000
S3.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	15.355	27.00	5.000
D1	330.00	20.00	0.000	2.500	0.000	307.67	0.000	158.48	56.00	5.000
S2.0	330.00	0.000	0.000	1.000	0.000	329.00	0.000	14.493	60.00	13.00
B	330.00	0.000	1.500	1.000	0.000	329.00	328.50	16.869	42.00	0.000
B1	330.00	0.000	0.000	1.000	0.000	329.00	0.000	1.144	36.00	0.000
S2.1	330.00	0.000	1.500	1.000	0.000	329.00	328.50	49.843	57.00	0.000
S4.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	19.298	27.00	0.000
S1.1	330.00	0.000	0.000	1.000	0.000	329.00	0.000	15.128	60.00	0.000
D2	330.00	20.00	0.000	2.500	0.000	307.67	0.000	233.60	57.00	7.000
S5.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	14.508	27.00	0.000
D3	330.00	20.00	0.000	2.500	0.000	307.67	0.000	237.04	64.00	3.000
S1.2	330.00	0.000	0.000	1.000	0.000	329.00	0.000	31.031	53.00	0.000
S7.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	110.35	27.00	1.000
D4	330.00	20.00	0.000	2.500	0.000	307.67	0.000	319.48	60.00	1.500
S9.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	9.286	27.00	0.000

A	330.00	0.000	1.500	1.000	0.000	329.00	328.50	23.096	27.00	0.000
S6.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	44.288	43.00	0.000
D5	330.00	20.00	0.000	2.500	0.000	307.67	0.000	357.57	55.00	1.500
S10.0	330.00	0.000	0.000	1.000	0.000	329.00	0.000	10.914	47.00	0.000
S8.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	35.479	27.00	0.000
S8.1	330.00	0.000	1.500	1.000	0.000	329.00	328.50	44.688	27.00	9.000
D6	330.00	20.00	0.000	2.500	0.000	307.67	0.000	401.70	57.00	6.000
S12.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	25.574	27.00	0.000
S11.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	16.121	27.00	0.000
D7	330.00	20.00	0.000	2.500	0.000	307.67	0.000	420.41	57.00	2.500
S13.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	88.552	27.00	0.000
S14.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	5.361	9.000	0.000
S14.1	330.00	0.000	1.500	1.000	0.000	329.00	328.50	11.955	27.00	9.000
D8	330.00	20.00	0.000	2.500	0.000	307.67	0.000	476.51	57.00	2.500
S16.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	57.766	9.000	0.000
S15.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	22.101	27.00	0.000
D9	330.00	20.00	0.000	2.500	0.000	307.67	0.000	497.91	59.00	5.000
S17.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	74.340	27.00	0.000
S17.1	330.00	0.000	1.500	1.000	0.000	329.00	328.50	104.09	9.000	0.000
S18.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	28.755	33.00	0.000
D10	330.00	20.00	0.000	2.500	0.000	307.67	0.000	570.83	50.00	4.300
S19.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	35.863	9.000	0.000
S20.0	330.00	0.000	1.500	1.000	0.000	329.00	328.50	31.401	27.00	0.000
Outlet	330.00	20.00	0.000	2.500	0.000	307.67	0.000	599.60	45.00	0.000

Run completed at: 6th September 2010 10:38:47

This page has been left blank intentionally

Appendix E

Anzac Creek TUFLOW model inputs and results – existing and proposed conditions

This page has been left blank intentionally

LEGEND

Project Site Boundary

Flood Level Contour (m AHD)

Notes:

TUFLOW modelling was undertaken using Liverpool City Council's TUFLOW model for Anzac Creek (Ac_exg_100y9h_01_Heritage_2d). TUFLOW Version 2009-08-BF. Adjustments were made to represent existing flows leaving the project site.

The mapping on this drawing represents TUFLOW model results for the 100 year ARI 9 hour storm duration.

Flood regimes are based on aerial laser survey provided by AAM Hatch Pty Ltd (May 2008) and ground survey of the site by Hart and Forrester (August 2010).

This figure may not represent local flow regimes away from the Anzac Creek corridor.

TUFLOW Model: (TUFLOW Version 2009-08-BF)

Figure Workspace:

Aerial Imagery by NearMap 2011 10

Client:	SYDNEY INTERMODAL TERMINAL ALLIANCE (SIMTA)
Project:	MOOREBANK INTERMODAL TERMINAL FACILITY
Scale: 1:3000 @ A1	
TUFLOW Grid Size: 5m	
Datum: GDA94	
Projection: MGA56	
Title:	ANZAC CREEK MODEL: 100 YEAR ARI FLOOD DEPTH AND FLOOD LEVEL CONTOURS FOR EXISTING CONDITION

HYDER CONSULTING PTY LTD

ABN 76 104 485 289
Level 5, 141 Walker Street
North Sydney NSW 2060

Tel +61 (02) 9907 9000
Fax +61 (02) 9907 9001
www.hyderconsulting.com
(c) Copyright reserved

Figure No	Project No	Issue
01	AA003210	01

Legend

Project Site Boundary
Line

Notes

TUFLOW modelling was undertaken using Liverpool City Councils' TUFLOW model for Anzac Creek (Ac_exg_100yr_01_Blockage_25pc.tcf – TUFLOW Version 2009-09-AE). Adjustments were made to represent existing and proposed flow leaving the project site.

The mapping on this drawing represents TUFLOW model results for the 100 year ARI 9 hour storm duration.

The mapping is based on aerial laser survey provided by AAM Hatch Pty Ltd (May 2008) and ground survey of the site by [illegible] (August 2010).

TUFLOW Run Files (TUFLOW Version 2009-09-AE):
[illegible]
Ac_...yr_Exg100yr_01.tcf
Ac_...yr_Prop100yr_01.tcf

Figure Workspace:
[illegible]
100yr_Afflux_Anzac_Ck_Flood_Map.wor

Aerial Imagery by Nearmap 2011 ®

Client	SYDNEY INTERMODAL TERMINAL ALLIANCE (SIMTA)
Project	MOOREBANK INTERMODAL TERMINAL FACILITY
Scale: 1:3500 @ A1	
TUFLOW Grid Size: 5m	
Datum: GDA94	
Projection: MGA56	
Title	ANZAC CREEK MODEL - CHANGE IN 100 YEAR ARI FLOW REGIMES BETWEEN EXISTING AND PROPOSED CONDITIONS

HYDER CONSULTING PTY LTD
ABN 76 104 485 289
Level 5, 141 Walker Street
North Sydney NSW 2060
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001
www.hyderconsulting.com
(c) Copyright reserved

Figure No	Project No		Issue
E2	AA003210	N	01

LEGEND

Project Site Boundary

Notes:

TUFLOW modelling was undertaken using Liverpool City Council's TUFLOW model for Anzac Creek ... TUFLOW Version 2008-08-BF). Adjustments were made to represent existing flows leaving the project site.

The mapping on this drawing represents TUFLOW model results for the PMF 1 hour storm duration.

Flood regimes are based on aerial laser survey provided by AAM Hatch Pty Ltd (May 2008) and ground survey of the site by Hard and Forester (August 2010).

This figure may not represent local flow regimes away from the Anzac Creek corridor.

TUFLOW run files: (TUFLOW Version 2008-08-BB)

Figure Workspace:

Aerial imagery by NearMap 2011 ©

Client	SYDNEY INTERMODAL TERMINAL ALLIANCE (SIMTA)
Project	MOOREBANK INTERMODAL TERMINAL FACILITY
Scale: 1:3500 @ A1	
TUFLOW Grid Size: 5m	
Datum: GDA94	
Projection: MGA56	
Title	ANZAC CREEK MODEL PROBABLE MAXIMUM FLOOD DEPTH AND FLOOD LEVEL CONTOURS FOR EXISTING CONDITION

Hyder

HYDER CONSULTING PTY LTD
ABN 76 104 485 289
Level 5, 141 Walker Street
North Sydney NSW 2060
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001
www.hyderconsulting.com
(c) Copyright reserved

Figure No	Project No		Issue
E3	AA003210	N	01

LEGEND

Project Site Boundary — line

Flood Level Contour (m AHD) — line

Notes

TUFLOW modelling was undertaken using Liverpool City Councils' TUFLOW model for Anzac Creek (Ac_exg_PMF16_01.tcf - TUFLOW Version 2008-08-BY). Adjustments were made to represent proposed filling of the project site.

The mapping on this drawing represents TUFLOW model results for the PMF 1 hour storm duration.

Flood regimes are based on aerial laser survey provided by AAM Hatch Pty Ltd (May 2008) and ground survey of the site by Hard and Forrester (August 2010).

This figure may not represent local flow regimes away from the Anzac Creek corridor.

TUFLOW Run files: (TUFLOW Version 2008-08-DS)
F:\AA003210\D-Calculations\E-Civil\Stormwater\Flooding\2011 - Revised Modelling\TUFLOW - Anzac Creek\TUFLOW\runs\Creek\TUFLOW\runs\Ac_Pro_PropPMF16_01.tcf

Figure Workspace
F:\AA003210\D-Calculations\E-Civil\Stormwater\Flooding\2011 - Revised Modelling\PROJECT FIGURES\Workspace\PMF_Proposed_Anzac_Ck_Flood_Map.mxd

Aerial Imagery by NearMap 2011.

Client:	SYDNEY INTERMODAL TERMINAL ALLIANCE (SIMTA)
Project:	MOOREBANK INTERMODAL TERMINAL FACILITY
Scale:	1:3500 @ A1
TUFLOW Grid Size:	5m
Datum:	GDA94
Projection:	MGA56
Title:	ANZAC CREEK MODEL: PROBABLE MAXIMUM FLOOD DEPTH AND FLOOD LEVEL CONTOURS FOR PROPOSED CONDITION
Figure No.	E4
Project No.	AA003210
Sheet	01

HYDER CONSULTING PTY LTD
ABN 76 104 485 289
Level 5, 141 Walker Street
North Sydney NSW 2060
Tel: +61 (0)2 8907 9000
Fax: +61 (0)2 8907 9001
www.hyderconsulting.com