

## CHAPTER 2

### HYDROLOGY

#### 2.3 Design Frequency And Rainfall

The storm frequencies and rainfall intensities to be used for the design of different storm water management facilities are as follows:

<b>Storm Water Management Facility</b>	<b>Storm Frequency</b>
Cross Drainage Facilities	100-year (under roadways)
Storm Drains	25-year (Lateral closed systems)
Inlets	10-year
Outlet Protection	25-year
Storage Facilities	2-, 5-, 10-, 25-year (detained) and route the 100-year through facility
Emergency Spillway	100-year
Erosion & Sediment Control	25-year
Water Quality	1.2 inches of rainfall

**Table 2.3-1  
Rainfall Intensity (in/hr): Atlanta Metropolitan Area**

<u>Storm Duration</u>		<u>Return Period</u>						
<u>Hours</u>	<u>Minutes</u>	<u>1</u>	<u>2</u>	<u>5</u>	<u>10</u>	<u>25</u>	<u>50</u>	<u>100</u>
0	5	5.40	5.76	6.63	7.30	8.28	9.08	9.87
0	10	4.13	4.66	5.45	6.04	6.92	7.61	8.29
0	15	3.39	3.94	4.6	5.18	5.98	6.59	7.20
0	30	2.27	2.72	3.30	3.72	4.33	4.81	5.28
1	0	1.44	1.73	2.16	2.47	2.90	3.25	3.59
2	0	0.95	1.13	1.38	1.56	1.81	1.98	2.17
3	0	0.68	0.81	0.99	1.11	1.31	1.45	1.59
6	0	0.38	0.47	0.59	0.68	0.79	0.89	0.96
12	0	0.24	0.28	0.36	0.41	0.47	0.52	0.57
24	0	0.14	0.16	0.20	0.23	0.27	0.30	0.32

Source: Georgia Stormwater Management Design Manual

Notes:

All drainage system designs shall be checked using the 100-year design rainfall frequency to be sure structures are not flooded or increased damage does not occur to the highway or adjacent property.

Emergency spillways shall be design for the 100-year storm frequency assuming a build-out condition of the basin.

Emergency spillways shall be located at the 25-year storm frequency pond elevation.

Emergency spillways shall be completely independent of the primary spillway.

END OF SECTION 2.3