Project Name: GLCPS
SCI # 51053.00
WQU #1

Equation:

$$Q_{0.5\ or\ 1} = (q_u)(A)(WQV)$$

Where:

$Q_{0.5}$ = flow rate associated with the first 1/2 -inch of runoff

Q_1 = flow rate associated with the first 1 -inch of runoff

q_u = the unit peak discharge, in csm/in

A = impervious surface drainage area (in square miles)

WQV = water quality volume in watershed inches (1/2-inch or 1-inch*)

* use 1-inch if in/near critical resource area

Variable	Value
A (ft^2)	5,276
ft^2/mi^2	0.000000035870
CN	98
Tc	0.1
I_a/P**	0.034
q_u	774
WQV	0.5

$Q_{0.5}$=	0.073 CFS

**I_a/P = 0.058 for 1/2-inch runoff OR 0.034 for 1-inch of runoff

Coversion Rate: 1 ft^2=3.587x10^{-8}

Figure 3: For First 1-inch Runoff, Ia/P Curve = 0.034, Relationship Between Unit Peak Discharge and Time of Concentration for NRCS Type III Storm Distribution

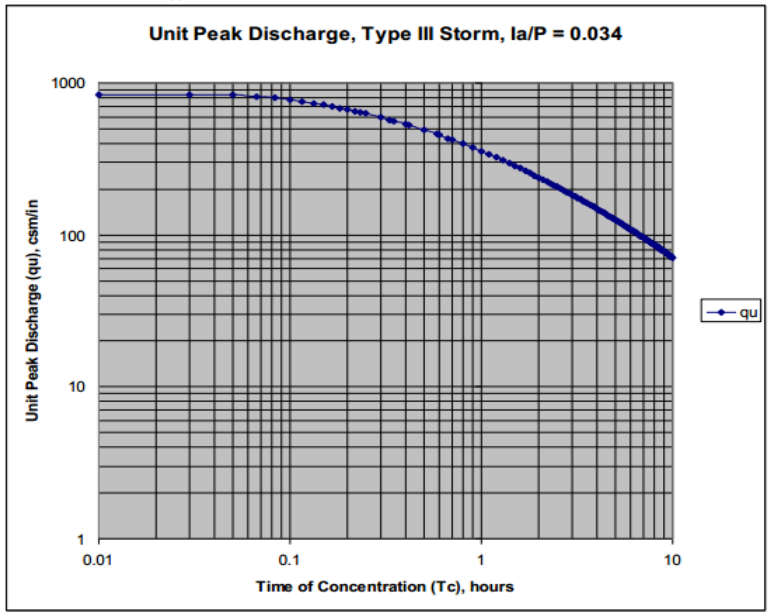

Figure 4: for First 1-inch Runoff, Table of qu values for Ia/P Curve = 0.034, listed by tc, for Type III Stor Distribution

Tc (Hours)	qu (csm/in)	Tc (Hours)	qu (csm/in)	Tc (Hours)	qu (csm/in)
0.01	835	2.7	197	7.1	95
0.03	835	2.8	192	7.2	94
0.05	831	2.9	187	7.3	93
0.067	814	3	183	7.4	92
0.083	795	3.1	179	7.5	91
0.1	774	3.2	175	7.6	90
0.116	755	3.3	171	7.7	89
0.133	736	3.4	168	7.8	88
0.15	717	3.5	164	7.9	87
0.167	700	3.6	161	8	86
0.183	685	3.7	158	8.1	85
0.2	669	3.8	155	8.2	84
0.217	654	3.9	152	8.3	84
0.233	641	4	149	8.4	83
0.25	628	4.1	146	8.5	82
0.3	593	4.2	144	8.6	81
0.333	572	4.3	141	8.7	80
0.35	563	4.4	139	8.8	79
0.4	536	4.5	137	8.9	79
0.416	528	4.6	134	9	78
0.5	491	4.7	132	9.1	77
0.583	460	4.8	130	9.2	76
0.6	454	4.9	128	9.3	76
0.667	433	5	126	9.4	75
0.7	424	5.1	124	9.5	74
0.8	398	5.2	122	9.6	74
0.9	376	5.3	120	9.7	73
1	356	5.4	119	9.8	72
1.1	339	5.5	117	9.9	72
1.2	323	5.6	115	10	71
1.3	309	5.7	114		
1.4	296	5.8	112		
1.5	285	5.9	111		
1.6	274	6	109		
1.7	264	6.1	108		
1.8	255	6.2	106		
1.9	247	6.3	105		
2	239	6.4	104		
2.1	232	6.5	102		
2.2	225	6.6	101		
2.3	219	6.7	100		
2.4	213	6.8	99		
2.5	207	6.9	98		
2.6	202	7	96		

Figure 1: For First ½-inch Runoff, Ia/P Curve = 0.058, Relationship Between Unit Peak Discharge and Time of Concentration for NRCS Type III Storm Distribution.

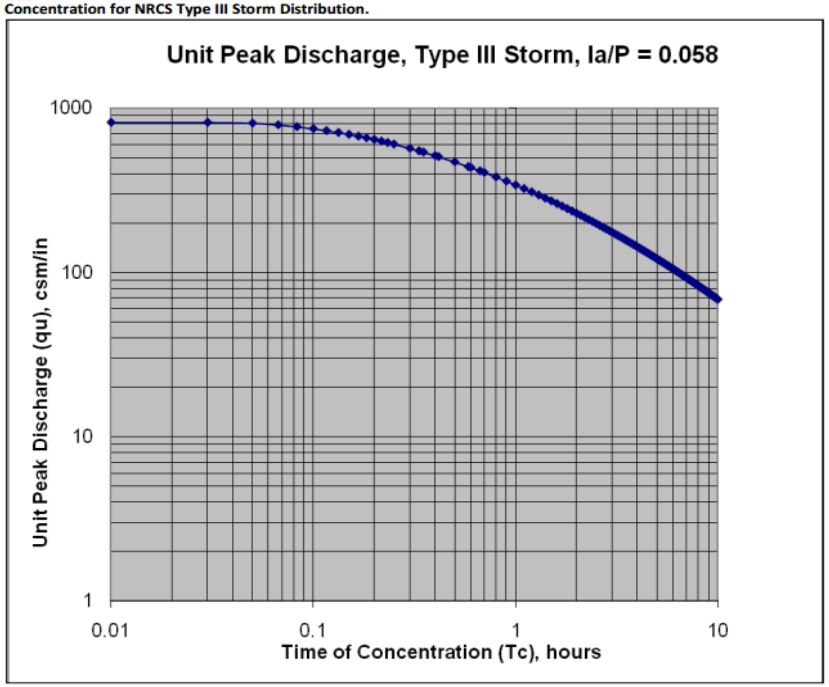

Figure 2: For First ½-inch of Runoff, Table of qu values for Ia/P Curve = 0.0.058, listed by tc, for Type III Storm Distribution

Tc (Hours)	qu (csm/in)	Tc (Hours)	qu (csm/in)	Tc (Hours)	qu (csm/in)	Tc (Hours)	qu (csm/in)
0.01	821	1.8	246	5.3	116	8.8	77
0.03	821	1.9	238	5.4	115	8.9	76
0.05	813	2	230	5.5	113	9	76
0.067	794	2.1	223	5.6	112	9.1	75
0.083	773	2.2	217	5.7	110	9.2	74
0.1	752	2.3	211	5.8	109	9.3	74
0.116	733	2.4	205	5.9	107	9.4	73
0.133	713	2.5	200	6	106	9.5	72
0.15	694	2.6	194	6.1	104	9.6	72
0.167	677	2.7	190	6.2	103	9.7	71
0.183	662	2.8	185	6.3	102	9.8	70
0.2	646	2.9	181	6.4	100	9.9	70
0.217	632	3	176	6.5	99	10	69
0.233	619	3.1	173	6.6	98		
0.25	606	3.2	169	6.7	97		
0.3	572	3.3	165	6.8	96		
0.333	552	3.4	162	6.9	94		
0.35	542	3.5	158	7	93		
0.4	516	3.6	155	7.1	92		
0.416	508	3.7	152	7.2	91		
0.5	472	3.8	149	7.3	90		
0.583	443	3.9	147	7.4	89		
0.6	437	4	144	7.5	88		
0.667	417	4.1	141	7.6	87		
0.7	408	4.2	139	7.7	86		
0.8	383	4.3	136	7.8	85		
0.9	361	4.4	134	7.9	84		
1	342	4.5	132	8	84		
1.1	325	4.6	130	8.1	83		
1.2	311	4.7	128	8.2	82		
1.3	297	4.8	126	8.3	81		
1.4	285	4.9	124	8.4	80		
1.5	274	5	122	8.5	79		
1.6	264	5.1	120	8.6	79		
1.7	254	5.2	118	8.7	78		

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