

## CHAPTER 8

# STANDARDS AND CRITERIA

### ***Introduction***

Stormwater management problems are not confined to site or municipal boundaries; they may be watershed-wide in scope. Therefore, effective stormwater management is accomplished through the development of performance standards and criteria that consider the basin-wide impacts of runoff caused by site development. Traditionally, stormwater management has been applied to individual sites only, without consideration for the impact of post-development runoff from individual sites on the entire watershed. Prior to early 1980, effects of the traditional stormwater management approach were not considered. Watershed planning during the past decade has utilized an approach known as the “release rate method” to address the impact of post-development runoff from individual sites on the entire watershed.

In an effort to simplify the regulations and requirements for rural watersheds where development potential is limited to a few areas or corridors, other stormwater techniques have been utilized to identify critical development areas within the Combined Watershed. This method is based on the future development conditions within the Combined Watershed as identified by the planning organizations involved in the study. Future conditions peak flow projections were compared to the existing conditions peak flow estimates to compute the increased peak flows due to projected development within the Combined Watershed. Critical development areas within the watershed were identified as areas where sub-watersheds peak flows increased by ten (10%) percent or greater in the 10-year storm event.

The Fishing Creek/Cedar Run Watershed is a rural watershed where future development impacts are predicted to be limited along a corridor as shown on Plate 2. These critical areas are identified in Table 8-1. This corridor has been identified as an area of critical development where additional stormwater requirements may need to be implemented beyond traditional standards where post-development flow cannot exceed pre-development levels.

**Table 8-1**  
**Adjusted Curve Number Comparison and**  
**Critical Development Area Identification in the**  
**Fishing Creek/Cedar Run Watershed**  
(Curve Numbers are based on Crop/Pasture CN = Pasture CN)

Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area	Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area
FC1	1.25	64.0	64.0	0%		NO	FC21	2.51	55.0	55.6	90%	0.6	NO
FC2	0.32	72.5	72.5	0%		NO	FC22	1.51	54.5	54.5	97%		NO
FC3	1.30	66.9	66.9	2%		NO	FC23	2.09	63.9	63.9	3%		NO
FC4	1.64	66.3	66.3	19%		NO	FC24	1.65	56.5	56.5	65%		NO
FC5	0.88	66.4	66.4	0%		NO	FC25	0.91	64.3	64.3	0%		NO
FC6	1.30	67.4	67.4	31%		NO	FC26	1.53	67.9	67.9	1%		NO
FC7	0.92	68.7	68.7	0%		NO	FC27	3.12	57.7	57.7	62%		NO
FC8	1.38	65.8	65.8	11%		NO	FC28	0.95	68.2	68.3	2%		NO
FC9	1.58	65.8	65.8	16%		NO	FC29	3.55	56.1	56.1	62%		NO
FC10	2.40	62.6	62.6	79%		NO	FC30	3.17	64.2	64.3	1%		NO
FC11	1.52	64.1	64.1	6%		NO	FC31	2.81	53.8	53.8	65%		NO
FC12	3.27	56.1	56.1	78%		NO	FC32	1.31	62.3	62.3	0%		NO
FC13	1.72	67.4	67.4	2%		NO	FC33	1.07	59.8	59.9	47%		NO
FC14	2.89	53.0	53.0	72%		NO	FC34	2.55	67.5	67.5	0%		NO
FC15	0.60	52.2	52.2	90%		NO	FC35	1.28	61.7	61.7	20%		NO
FC16	1.13	56.8	56.8	63%		NO	FC36	2.26	69.0	69.0	0%		NO
FC17	0.93	67.1	67.1	0%		NO	FC37	1.92	66.9	66.9	0%		NO
FC18	1.54	72.2	72.2	0%		NO	FC38	1.67	67.0	67.0	0%		NO
FC19	2.30	52.8	52.8	72%		NO	FC39	3.14	66.4	66.4	0%		NO
FC20	0.56	67.8	67.8	6%		NO	FC40	1.78	66.5	66.5	0%		NO

**Table 8-1 (cont.)**  
**Adjusted Curve Number Comparison and**  
**Critical Development Area Identification in the**  
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Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area	Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area
FC41	2.59	65.6	65.6	0%		NO	FC61	1.59	51.5	51.5	67%		YES
FC42	1.27	69.4	69.4	0%		NO	FC62	0.75	56.4	56.4	49%		YES
FC43	0.79	56.3	58.1	34%	1.9	YES	FC63	0.80	54.7	56.4	57%	1.7	YES
FC44	2.13	63.8	63.8	0%		NO	FC64	0.94	40.0	41.7	99%	1.7	YES
FC45	2.12	56.0	56.0	0%		NO	FC65	0.82	40.6	42.7	100%	2.1	YES
FC46	1.72	56.4	56.4	0%		NO	FC66	2.07	64.3	64.3	0%		NO
FC47	0.97	71.0	71.1	0%		YES	FC67	1.66	67.9	67.9	0%		NO
FC48	0.67	65.4	73.1	36%	7.8	YES	FC68	1.52	67.6	67.6	0%		NO
FC49	1.70	46.5	51.2	79%	4.8	YES	FC69	2.10	67.8	67.8	0%		NO
FC50	0.59	69.6	78.6	3%	9.0	YES	FC70	1.16	63.7	63.7	0%		NO
FC51	1.13	69.4	69.4	0%		YES	FC71	1.52	67.6	67.6	0%		NO
FC52	0.42	71.7	71.7	0%		YES	FC72	1.59	66.5	66.5	0%		NO
FC53	1.28	43.8	43.8	77%		YES	FC73	0.46	59.5	59.5	0%		NO
FC54	0.88	62.5	62.5	10%		YES	FC74	2.58	58.6	58.6	0%		NO
FC55	1.57	56.2	56.2	40%		YES	FC75	0.64	47.7	55.9	45%	8.2	YES
FC56	1.22	65.6	65.6	27%		YES	FC76	0.68	44.1	53.5	100%	9.4	YES
FC57	1.63	55.9	55.9	0%		YES	FC77	1.03	51.6	53.5	100%	1.9	YES
FC58	0.86	69.8	69.8	3%		YES	FC78	2.86	58.9	61.2	63%	2.3	YES
FC59	1.41	49.1	49.1	90%		YES	FC79	1.96	61.6	62.5	76%	0.9	YES
FC60	1.15	39.9	39.9	92%		YES	FC80	0.76	64.9	65.5	68%	0.7	NO

**Table 8-1 (cont.)**  
**Adjusted Curve Number Comparison and**  
**Critical Development Area Identification in the**  
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Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area	Sub- area No.	Area (sq mi)	Exist CN AB=20	Future CN AB=20	% Karst Change	CN Change	Critical Devel. Area
FC81	2.13	62.9	62.9	22%		NO	FC100	2.33	58.6	58.6	85%		NO
FC82	2.23	64.2	64.2	13%		NO	FC101	0.90	69.9	69.9	0%		NO
FC83	1.31	58.9	58.9	69%		NO	FC102	1.13	67.2	67.2	6%		NO
FC84	1.64	60.2	60.6	82%	0.4	NO	FC103	0.87	66.9	66.9	2%		NO
FC85	3.25	68.7	68.7	1%		NO	FC104	2.12	67.6	67.6	0%		NO
FC86	1.69	53.1	53.1	96%		NO	FC105	0.81	64.0	64.0	0%		NO
FC87	1.11	61.9	61.9	69%		NO	FC106	1.27	66.4	66.4	0%		NO
FC88	1.59	66.4	66.4	39%		NO	FC107	1.06	69.5	69.5	0%		NO
FC89	0.77	54.1	54.1	94%		NO	FC108	3.22	69.9	69.9	1%		NO
FC90	1.42	39.6	39.6	97%		NO	FC109	1.38	66.5	66.5	12%		NO
FC91	0.99	57.8	57.8	73%		NO	FC110	2.21	60.0	60.0	46%		NO
FC92	1.07	42.6	42.6	100%		NO	FC111	2.19	53.9	53.9	71%		NO
FC93	1.22	54.3	54.3	85%		NO	FC112	1.93	63.5	63.5	18%		NO
FC94	1.49	60.5	60.5	74%		NO	FC113	1.50	54.9	54.9	60%		NO
FC95	1.86	55.9	56.3	100%	0.4	NO	FC114	1.36	51.1	51.1	98%		NO
FC96	0.64	57.6	57.6	100%		NO	FC115	1.15	53.5	53.5	100%		NO
FC97	0.73	58.6	58.6	100%		NO	FC116	0.91	59.3	59.3	39%		NO
FC98	1.78	60.0	60.2	80%	0.2	NO	FC117	1.07	66.8	66.8	15%		NO
FC99	0.81	62.6	62.6	61%		NO	FC118	2.84	66.6	66.6	36%		NO

**Performance Standards**

The standards set forth in the Model Ordinance shall apply to all development within the Combined Watershed to promote flow attenuation, erosion and sediment control, and flood control. However, areas identified as “Critical Areas” shall be subject to the performance standards in Table 8-2.

**Table 8-2  
Stormwater Control for Critical Areas in the Fishing Creek/Cedar Run Watershed**

Type of Storm	Control for Development in any sub-area	Control for Development in Sub-areas Designated as “Critical Areas”
1 Year	1 Year Pre-development Peak Run-Off	1 Year Pre-development Peak Run-Off
2 Year	2 Year Pre-development Peak Run-Off	2 Year pre-Development Peak Run-Off
10 Year	10 Year Pre-development Peak Run-Off	2 Year Pre-development Peak Run-Off
25 Year	25 Year Pre-development Peak Run-Off	25 Year Pre-development Peak Run-Off
100 Year	100 Year Pre-development Peak Run-Off	100 Year Pre-development Peak Run-Off