



Public Works Department
P.O. Box 490, Station 58
Gainesville, FL 32627
Phone (352) 334-5070
Fax (352) 334-2093
www.cityofgainesville.org

Appendix C: Credit Calculation Methodology

1. The term credit refers to the remaining ability of the stormwater facility to treat certain types of pollutants/nutrients.
2. The stormwater facility is designed to treat a certain amount of pollutants/nutrients based on runoff from a particular drainage area. In this case the drainage area is 51 acres.
3. The annual rainfall used in calculating the annual runoff is 50.5 inches per year.
4. The runoff coefficient used to size the basin is 0.8.
5. The mean runoff concentration for the pollutants/nutrients is calculated using loading rates derived in Harper's "Stormwater Loading Rate Parameters for Central and South Florida, Revised October 1994".
See **Table 1** below for pollutant load parameters
6. Various sources are used to calculate the pollutant removal efficiency of a wet detention basin. They are as follows:
 - a. Nitrogen: 50%
 - b. Phosphorus: 50%
 - c. SS: 65%
 - d. Zn: 80%
 - e. Lead: 55%
7. Public Works staff calculated that only 86% of the contributing watershed could be treated in the pond.
8. Only 80% of the pollutant load is required to be treated. Credits can be purchased for this 80% requirement.
See **Table 2** for an example of a submittal.

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Table 1: Stormwater Pollutant Load Matrix

	<i>SF Residential</i>	<i>MF Residential</i>	<i>Low Intensity Commercial</i>	<i>High Intensity Commercial</i>	<i>Industrial</i>	<i>Open Space</i>
	Load Rate	Load Rate	Load Rate	Load Rate	Load Rate	Load Rate
<i>Constituent</i>	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
<i>Nitrogen</i>	2.29	2.42	1.18	2.83	1.79	1.25
<i>Phosphorus</i>	0.3	0.49	0.15	0.43	0.31	0.053
<i>TSS</i>	27	71.7	81	94.3	93.9	11.1
<i>Zn</i>	0.057	0.055	0.111	0.17	0.122	0
<i>Lead</i>	0.048	0.087	0.136	0.214	0.202	0

Table 2: Example of submittal for credits

<i>Constituent</i>	<i>Mean Runoff Concentration</i>	<i>Runoff Coefficient</i>	<i>Parcel Size</i>	<i>Annual Rainfall</i>	<i>Annual Runoff</i>	<i>Pollutant Load</i>	<i>Pollutant Load</i>	<i>80 % Pollutant Load</i>
	(mg/l)	C	AC	inches	(liters/year)	(kg/year)	(lbs./year)	(lbs./year)
<i>Nitrogen</i>	1.18	0.95	1.75	50.5	8,629,618	10.18	22.44	17.95
<i>Phosphorus</i>	0.15	0.95	1.75	50.5	8,629,618	1.29	2.85	2.28
<i>SS</i>	81	0.95	1.75	50.5	8,629,618	699.00	1540.59	1232.48
<i>Zn</i>	0.111	0.95	1.75	50.5	8,629,618	0.96	2.11	1.69
<i>Lead</i>	0.136	0.95	1.75	50.5	8,629,618	1.17	2.59	2.07