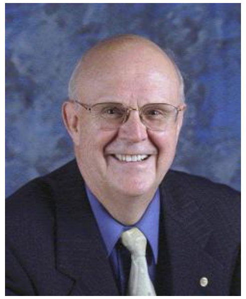
Catchment Characteristics

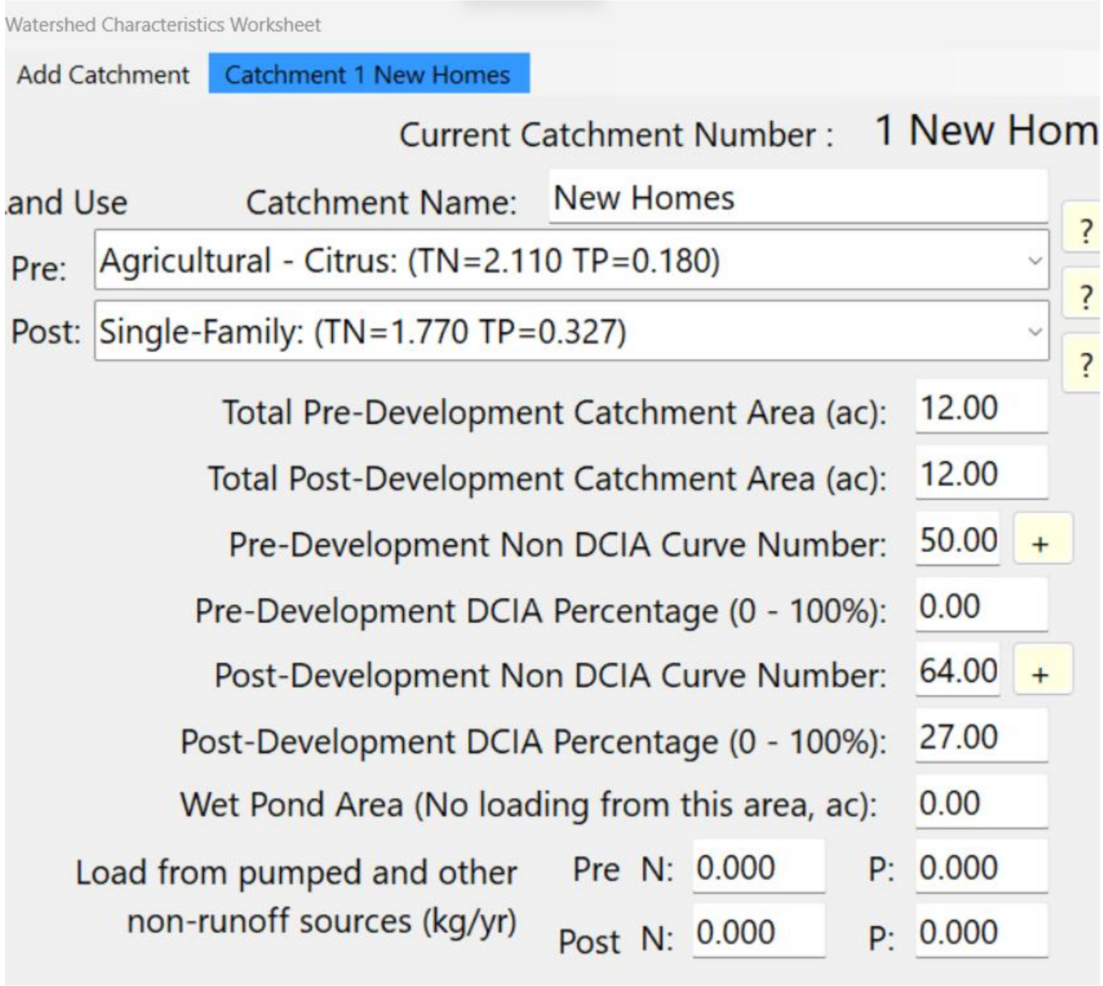
By: Marty Wanielista

January 2026



Learning Objectives

1. What is a catchment?
2. Worksheet inputs and outputs.
3. Applicant's Handbook
4. User Defined EMCs.
5. Combined land uses.
6. Wet pond area.

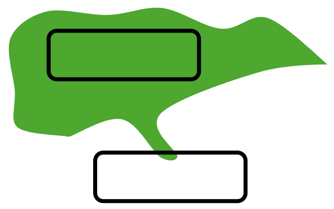


Stormwater BMP and Catchment

A **Best Management Practice BMP** for stormwater treatment means a practice or combination of practices, based on research, field-testing, and expert review, to be the most effective and practicable, including economic and technological considerations, of improving water quality by reducing excess nutrients and other pollutant loads in water. Traditional BMPs for stormwater treatment are identified and described in Appendix O and the applicable AH Volume II, while provisions for proposing alternative BMPs are specified in section 9.5.2 of this Volume.

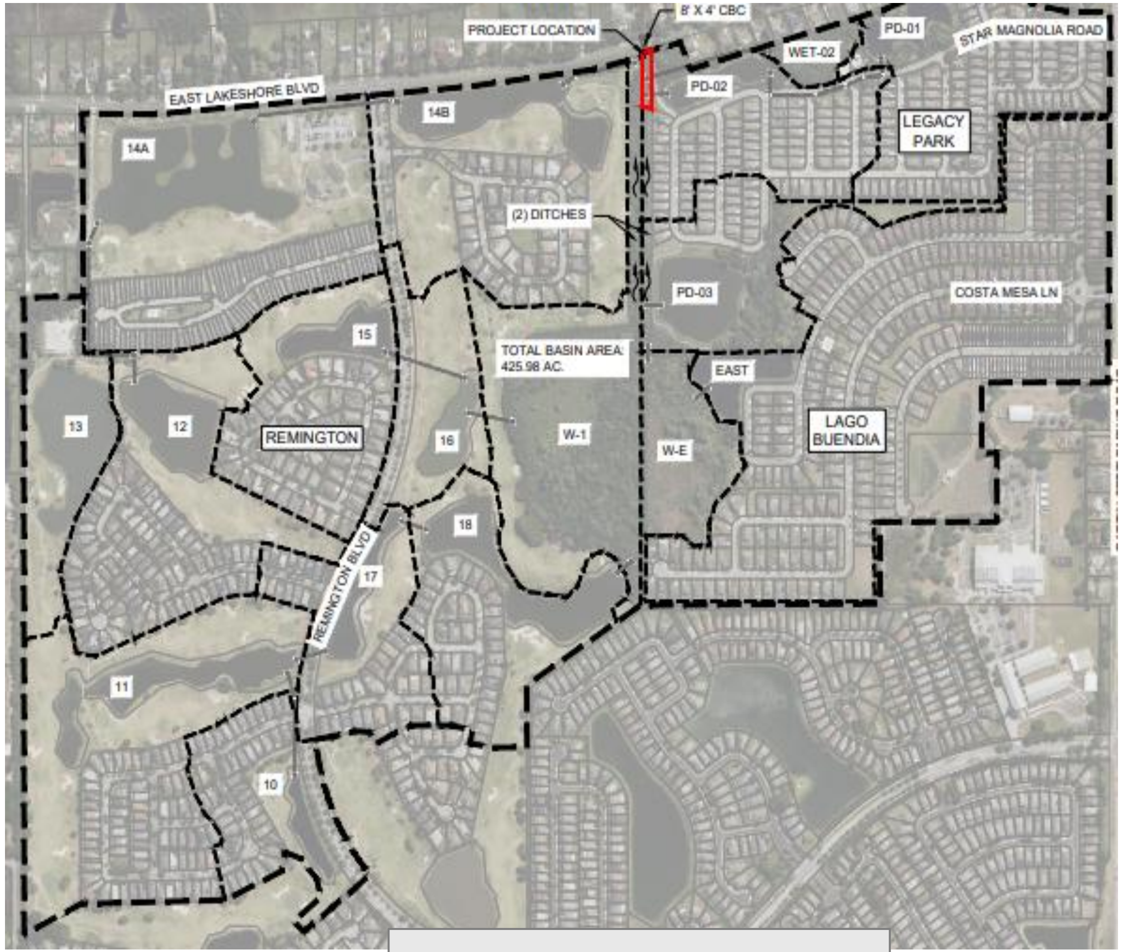
Source: Applicant's Handbook, Volume 1, Section 2, Definitions and Terms, June 28, 2024.

A **Catchment** is an area which discharges runoff water to a surface water or groundwater if retention. Within or at the discharge, there is potential for the management by a BMP.



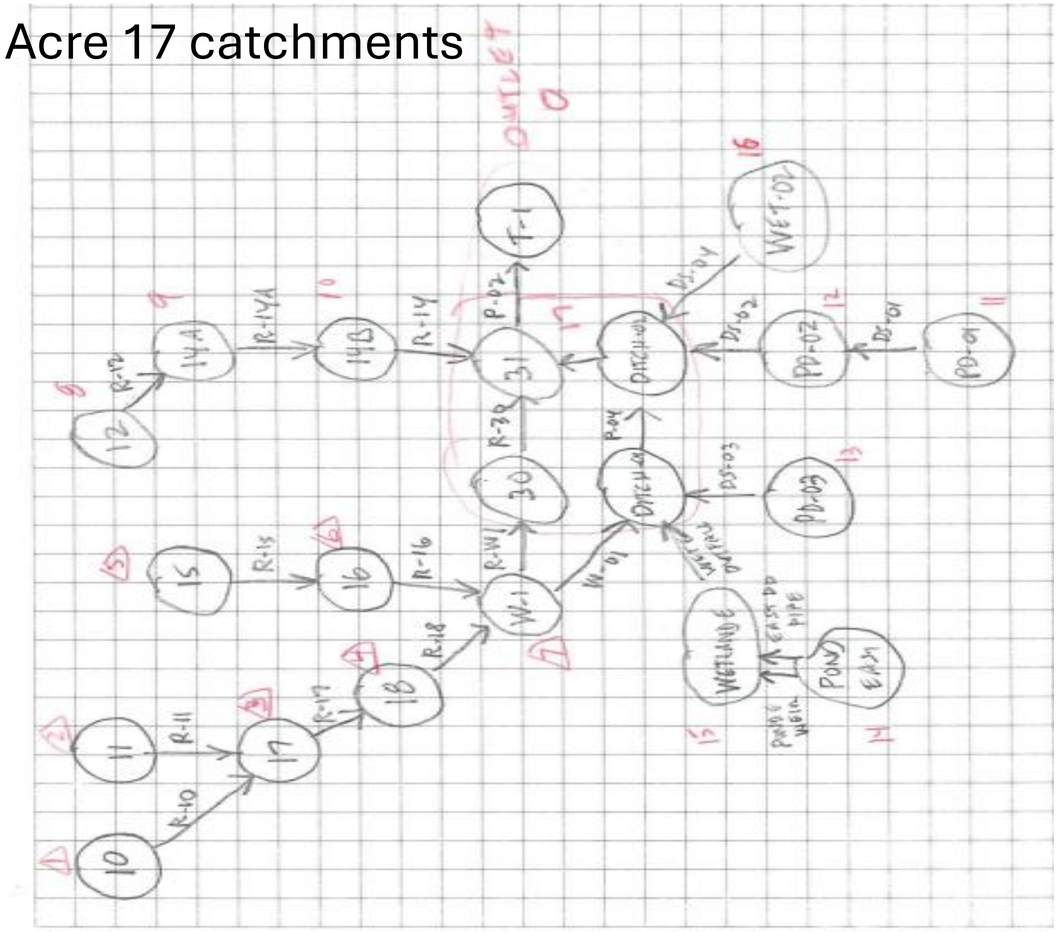
What is a catchment and configuration (flow direction)

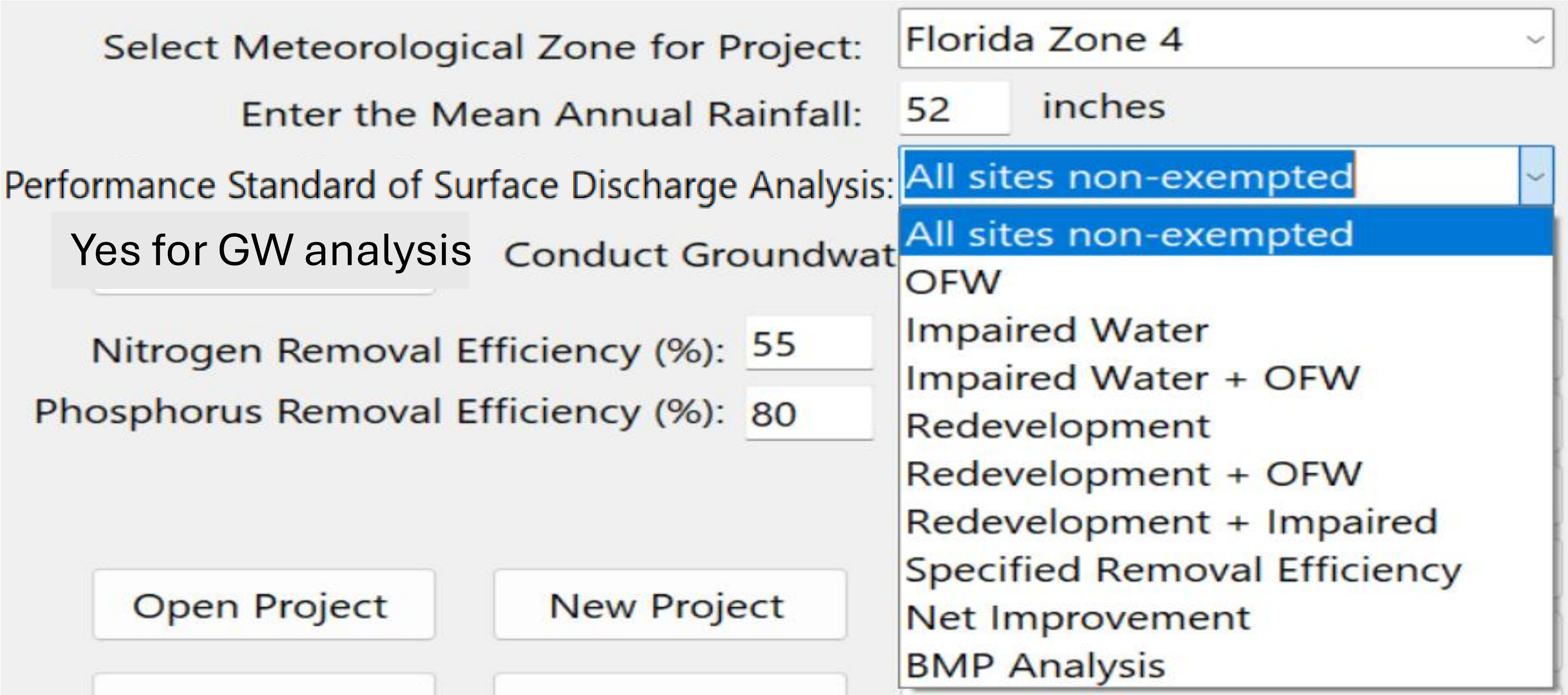
catchment area is defined by a point of discharge and possible BMP location

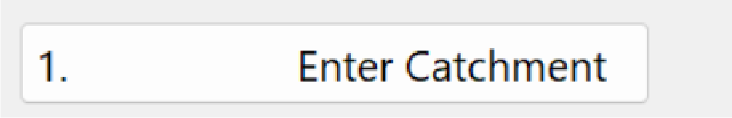


Courtesy of Ferguson

426 Acre 17 catchments





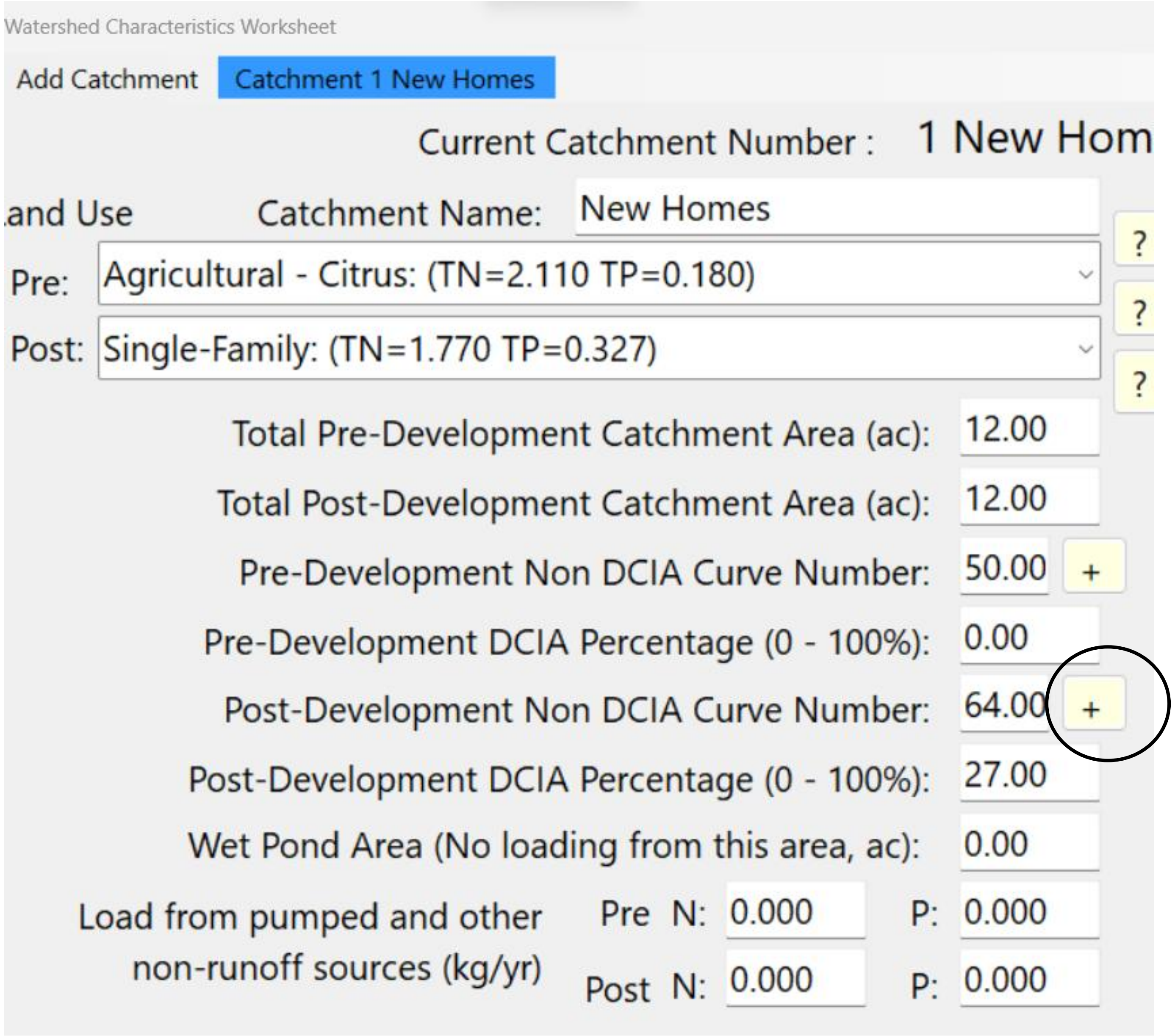


OPEN BMPFast

Catchment Worksheet

Must enter a catchment name and land use with the corresponding data.

Once data are entered you can add additional catchments



Multiple Land Uses in a catchment

Composite CN Calculator - Enter Area and CN (for Impervious Area CN = 95)

Area (ac)	CN	C	Weighted C
8.219	50	0.230	0.216
0.541	95	0.513	0.032
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000
0.000	0	0.000	0.000

Avg Weighted C
0.247

DCIA Percent
27.0

Composite CN
64.00

Calculate

Copy

Paste

Cancel

Back

Average CN= 72.5

Area Avg CN = 52.78

CN used to calculate runoff, thus add runoff from each and back calculate the CN value or CN = 64.

Use Composite Curve Number?

Do you want to use this value as the Curve Number? CCN = 64.00

Yes No

Wet Pond Contribution to Loadings

Watershed Characteristics Worksheet

Add Catchment | Catchment 1 New Homes

Current Catchment Number : 1 New Hon

and Use Catchment Name: New Homes

Pre: Agricultural - Citrus: (TN=2.110 TP=0.180)

Post: Single-Family: (TN=1.770 TP=0.327)

Total Pre-Development Catchment Area (ac):	12.00
Total Post-Development Catchment Area (ac):	12.00
Pre-Development Non DCIA Curve Number:	50.00 +
Pre-Development DCIA Percentage (0 - 100%):	0.00
Post-Development Non DCIA Curve Number:	64.00 +
Post-Development DCIA Percentage (0 - 100%):	27.00
Wet Pond Area (No loading from this area, ac):	1.00

Load from pumped and other non-runoff sources (kg/yr)

Pre	N: 0.000	P:	0.000
Post	N: 0.000	P:	0.000

With a one-acre wet pond

Annual ROC	0.022	0.260
Runoff (ac-ft/yr)	1.144	12.374
N Loading (kg/yr)	2.976	27.006
P Loading (kg/yr)	0.254	4.989

User Defined EMC values

Post:
1.277
0.25

Watershed Characteristics Worksheet

Add Catchment | Catchment 1 sub division 3

In this example, some of the DCIA is disconnected

Current Catchment Number : 1 sub division 3

Land Use

Catchment Name: sub division 3

Pre: Agricultural - Citrus: (TN=2.110 TP=0.180)

Post: User Defined Values

Concentrations used in Analysis

	Pre:	Post:
EMC(N) mg/l	2.110	1.277
EMC(P) mg/l	0.180	0.25

Composite EMC Calculator - Enter Area, CN, and EMC Post-Development Total Nitrogen

Area (ac)	EMC	CN	C	Weighted C
8.220	1.200	50	0.230	0.216
0.540	1.800	95	0.513	0.032
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000
0.000	0.000	0	0.000	0.000

Avg Weighted C
0.247

DCIA Percent
27.0

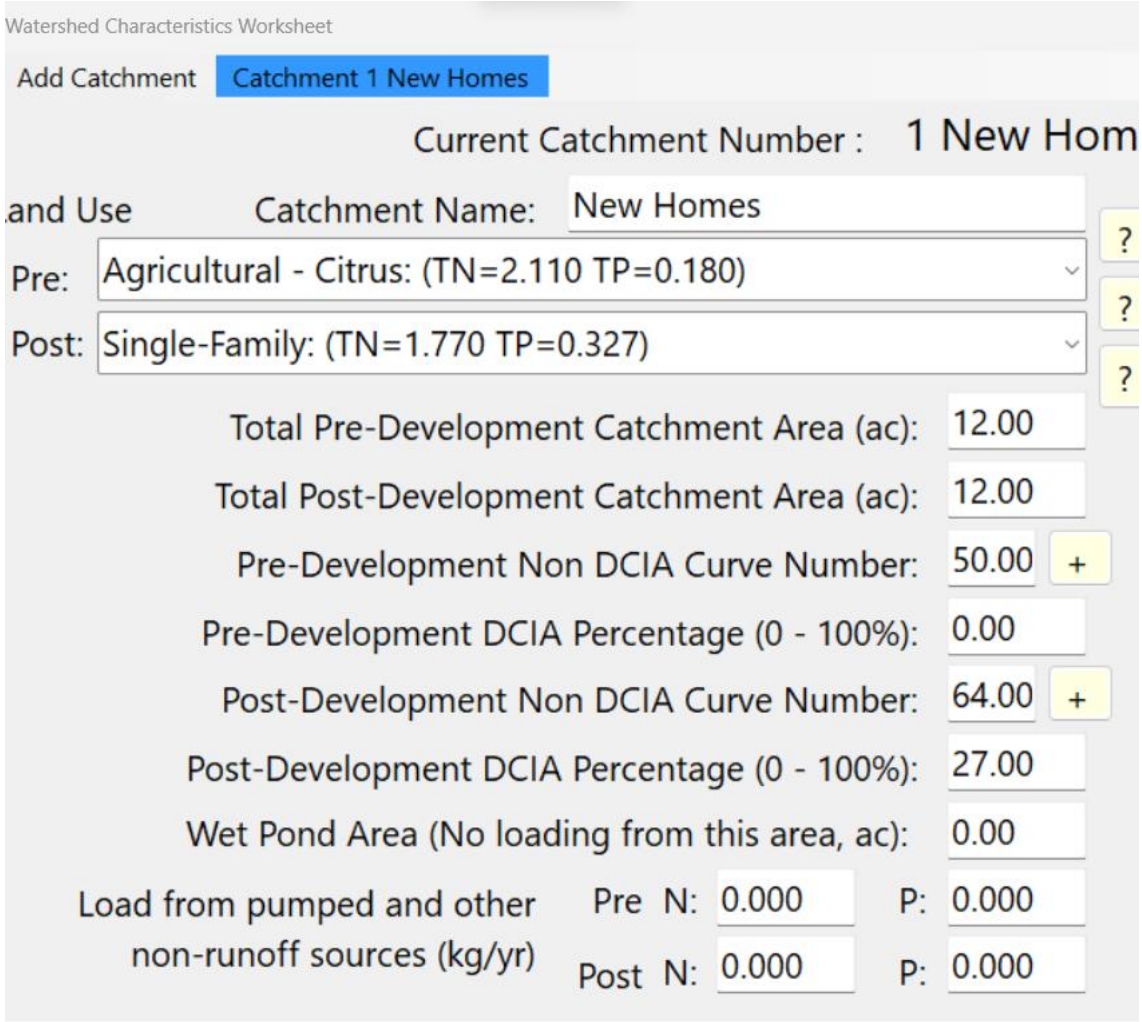
Composite EMC
1.277

Calculate

The agreed upon EMCs for the disconnected impervious area was 1.80 mg/L and for the pervious area was 1.20 mg/L.

What did we learn?

1. What a catchment is.
2. Worksheet inputs and outputs. Noted EMC value changes.
3. User Defined EMCs.
4. Combined land uses and CN/EMC calculations
5. Wet pond area.



Catchment Characteristics

By: Marty Wanielista

January 2026