



PONDS 3.2 TECHNICAL MEMO

Date: October 31, 2006

Re: **Inputting Pond Area as DCIA**

Q: Should the pond area be defined as Directly Connected Impervious Area (DCIA)?

A: Generally speaking, yes. For both dry and wet ponds, it is appropriate to define the actual pond area as DCIA.

Discussion

FIRST, consider the meaning of the term DCIA → **Directly Connected Impervious Area**. The DCIA is the area which is directly connected to the pond. Rainfall that lands within the DCIA reaches the pond more or less instantaneously, and without a significant loss of volume.

The pond area (whether it is a dry pond or a wet pond) is obviously directly connected. It is "impervious" or "DCIA" in the sense that all of the direct rainfall which hits the pond goes into the pond, instantaneously, without any appreciable losses.

Obviously, a pond is not "impervious" in the sense of being paved or impermeable. The question of whether the pond area actually *is* DCIA, or merely *behaves* as DCIA is not really relevant to the analysis. The pond area is treated as if it was DCIA.

SECOND, in a single layer groundwater analysis like PONDS, there is really not much difference between the pond and the soil beneath the pond. The pond and the soil beneath the pond both provide storage, although the pond (porosity = 100%) usually has more storage than the soil (say, porosity = 20% to 30%). So the fact that the pond is dry and/or does not perch is not very relevant, because the water that enters the pond is going into the soil storage beneath the pond.

Note that PONDS does not have any built in awareness of what your intentions are when you enter the runoff basin parameters, etc., in terms of whether the numbers represent the runoff basin or the pond, or both. It is up to the user to characterize the runoff basin parameters to account for the pond DCIA, etc.

Perhaps the easiest way to deal with the issue is to include the pond area in the DCIA input parameter (PONDS assumes a CN=98 for DCIA). Otherwise, you can include the pond area in a weighted average curve number calculation, with a CN = 98 to 100 for the pond area. Which is more appropriate is up to your judgment.